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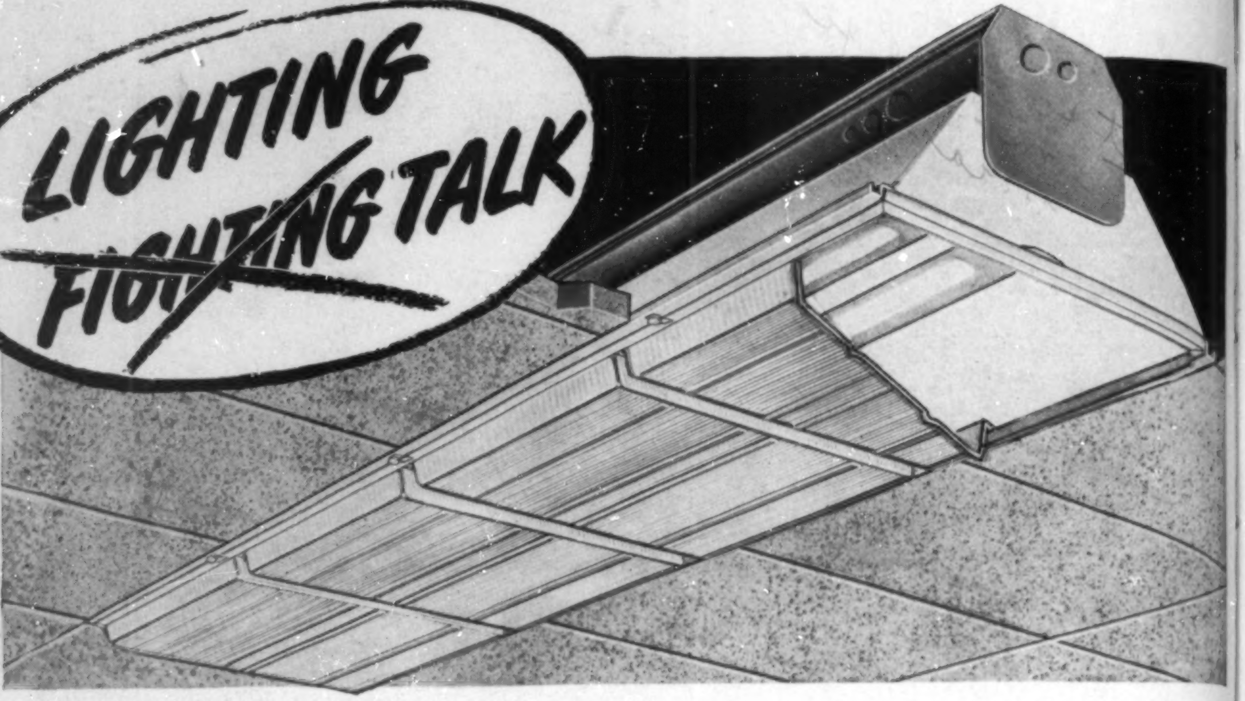
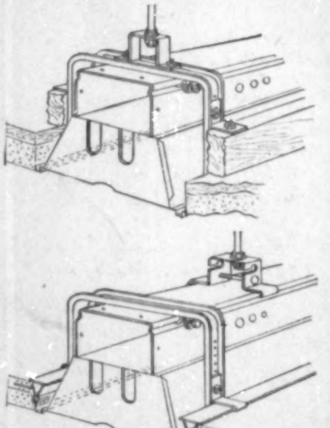
ARCHITECTURAL RECORD

AUGUST 1944 · HOSPITALS



. . . for the man who likes it straight from the shoulder!

THE MILLER TROFFER SIMPLIFIES FURRING



Miller Troffers can be hung directly from *structural* ceiling and, by means of patented Miller bracket, the *false* ceiling (either wood or metal frame) can be hung from Troffer. This greatly simplifies furring and adds to flexibility of installation.

We have just rounded out 100 years in the lighting business but we don't think about it that way. *We* figure we're just starting our *second* 100 years—with feet firmly braced on past experience and eyes on the future.

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They have proved themselves, breaking lighting bottlenecks on our production front. By consistently delivering the goods, they have *earned* their place of foremost consideration in postwar planning of all kinds, including offices, stores and schools.

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**Shown now only for your advance planning.*

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ILLUMINATING DIVISION
Fluorescent, Incandescent
Mercury Lighting Equipment

OIL GOODS DIVISION
Domestic Oil Burners
and Liquid Fuel Devices

ROLLING MILL DIVISION
Phosphor Bronze and Brass
in Sheets, Strips and Rolls

WAR CONTRACTS DIVISION
War Materiel

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COMBINED WITH AMERICAN ARCHITECT AND ARCHITECTURE

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VOL. 96 **AUGUST • 1944** NO. 2

COVER: Illustration by Francis X. Gina

THE OFFICE OF HOUSING RESEARCH 65
An Editorial . . . by Kenneth K. Stowell

OLIN HALL OF CHEMICAL ENGINEERING 66
Cornell University, Ithaca, N. Y. Shreve, Lamb and Harmon, Architects

RESORT HOTEL FOR POSTWAR TRAVELERS 74
Proposed Hollywood Hotel, Las Vegas, Nevada. Walter Wurdeman and Welton Becket, Architects

BUILDING TYPES STUDY No. 92 . . . . THE GENERAL HOSPITAL 77

HEALTH SERVICES AND CITY PLANNING 78
By Edwin A. Salmon

CORRELATING THE PUBLIC HEALTH CENTER WITH THE COMMUNITY GENERAL HOSPITAL 81
By Joseph W. Mountin

PLANNED NOW FOR POSTWAR EXPANSION 83
Schmidt, Garden and Erikson, Architects

NEW VERSION OF THE VERTICAL HOSPITAL 84
Wesley Memorial Hospital, Chicago, Illinois. Thielbar and Fugard, Architects

THE HOSPITAL BUILDING PROGRAM 92
By C. W. Munger, M. D.

HOSPITAL MATERIALS AND EQUIPMENT 94
By Alexander Robinson

REFRIGERATION AND AIR CONDITIONING 97
By Terry Mitchell, M. E.

NORFOLK COUNTY HOSPITAL 99
Portsmouth, Virginia. James R. Edmunds, Jr., Architect: Rudolph, Cook and Van Leeuwen, Inc., Associates

HOSPITALS THAT MEET THE EMERGENCY 99

COMMUNITY HOSPITAL FOR WAR WORKERS 100
Vallejo Community Hospital, Vallejo, California. Douglas Dacre Stone and Lou B. Mulloy, Architects

REPLANNED FOR WARTIME CONSTRUCTION 104
Arlington Hospital, Arlington, Virginia. Buckler and Fenhagen, Architects; Charles F. Neergaard, Consultant

100-BED HOSPITAL: A SUBURBAN PLAN 107
Hospital for Prince Georges County, Md. Kea, Ross and Walton, Architects: Charles F. Neergaard, Consultant

COMBINED HOSPITAL AND HEALTH CENTER 110
St. Monica's Hospital and Health Center, Phoenix, Arizona. Lescher and Mahoney, Architects

COMMUNITY HOSPITAL, WARTIME MODEL 113
Pittsburg Community Hospital, Pittsburg, California. Douglas Dacre Stone and Lou B. Mulloy, Architects

GENERAL HOSPITAL FOR A SMALL COMMUNITY 114
Schmidt, Garden and Erikson, Architects

HOSPITAL FOOD SERVICE 115
By Harry Blumberg

TIME-SAVER STANDARDS . . . Hospital Kitchens 117

THE RECORD REPORTS . . . News from the field 7

REQUIRED READING 26

FOR BETTER BUILDING 44
News of materials, equipment and methods

RUSSIA PLANS FOR REBUILDING 120
By Grigory Kuznetsov

INDEX TO ADVERTISEMENTS 182

H. JUDD PAYNE, Vice-President in charge of Magazine Division

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Flush Valve Application Data

HOSPITALS

Compiled by the manufacturers of Watrous Flush Valves

Poll of Architects Indicates Views on Flush Valves for Hospital Service

The selection of the most suitable flush valve combinations for hospital service is an important consideration. In order to obtain a summary of current views on this subject, Watrous recently prepared a special ballot sheet which was sent to a list of 232 architects who have had wide experience in hospital design.

The diagrams below analyze the results.

The use of the study is, of course, limited under wartime conditions but will be helpful in connection with postwar planning of hospital facilities.

THE IMPERIAL BRASS MANUFACTURING COMPANY
1240 WEST HARRISON ST., CHICAGO 7, ILLINOIS

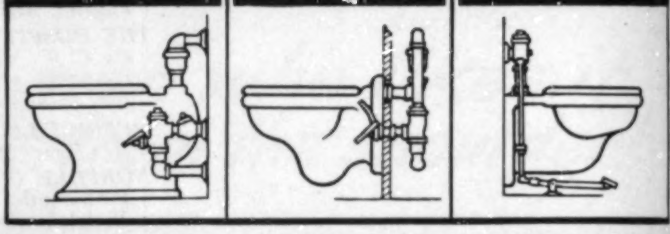
RESULTS

Votes were cast on the question: Which combinations do you believe offer the most advantages for use in postwar hospitals?

1st Choice
FOR ALL COMBINATIONS
SILENT-ACTION 94%

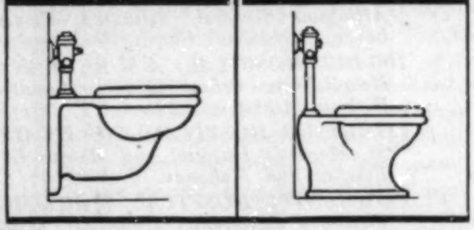
Practically all architects agreed that "silent-action" is the first point to specify when selecting flush valve combinations for hospital service.

FLUSH VALVE COMBINATIONS FOR CLOSET BOWLS



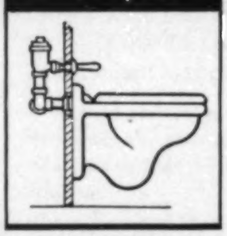
FOOT-OPERATED—Preferred by 39%

Foot-operated 1st choice | Foot-or-hand operated 2nd choice | Foot-lever type 3rd choice

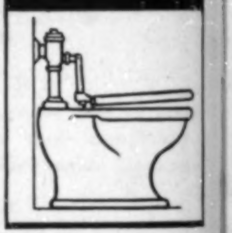


TOP SPUD—HAND-OPERATED—Preferred by 30%

Low top spud 1st choice | Medium top spud 2nd choice



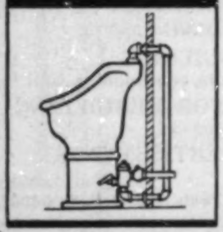
CONCEALED—Hand-operated Preferred by 22%



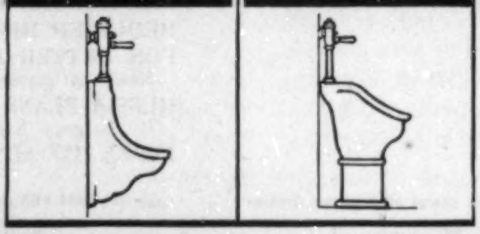
SEAT-ACTION Preferred by 9%

● *The sound design and careful workmanship built into Watrous Flush Valves make their selection a source of constant satisfaction over the years to everyone concerned.*

FLUSH VALVE COMBINATIONS FOR URINALS

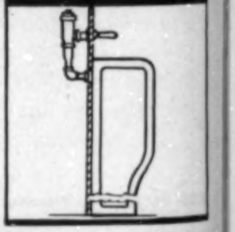


FOOT-OPERATED Preferred by 39.2%



EXPOSED—HAND OPERATED—Preferred by 37%

with wall hung urinal 1st choice | with pedestal type urinal 2nd choice



CONCEALED—Hand-operated Preferred by 23.8%

Watrous Flush Valves

See Sweet's Catalog File for specification information.

THE RECORD REPORTS

Housing Research Office Proposed • WPB Policy Shifts • H2 Program • New Advisory Committee to Facilities Bureau • GI Bill of Rights

DOWN THE LONG HALLWAYS of the Congressional office buildings are rows of closed doors in front of which mail and home newspapers are piling up. An occasional open door exhibits an empty room or a quietly idling secretarial staff. The few committee rooms in which there happen to be hearings on one thing or another are packed, however dry or remote the subject matter; the great numbers of newspaper men at the press tables and of tourists in the audience show more lack of competition. Like the Congressmen, the lobbyists have deserted Capitol Hill, but, unlike them, few have gone home. They have transferred their work, for the time being, to the government agencies.

This appearance would suggest that all work is being put off. As a matter of fact, it is precisely during this pre-election lull when the Congressmen themselves are not in Washington to track down thousands of complaints by their constituents that the committee staffs can settle down to solid jobs. Congressional and executive staffs fight less noisily and, indeed, are collaborating pretty well. In the building line plans have genuine importance.

Housing Research Office

One of the most ambitious efforts is that of Senators Kilgore and Wagner who have introduced the "Housing Research Bill," S.2046, under which an "Office of Housing Research" by its own technical studies and those of others will try to cut building costs and to improve quality. The program, as embodied in the bill itself, calls for research regarding the development of materials, methods of manufacture and distribution which would lower costs, improvements in the designing and construction of houses, the recommendation of improved local zoning and building codes, stabilization of building employment, etc. In illustration, the "OHR" might judge between competing insulating wools by itself constructing houses and seeing which did best in cutting the heating bill. It would do the same thing for other materials, becoming a referee to the claims of the clay, glass, lumber, metals and all the other interests.

Special Studies Projected

Months ago the Federal Trade Commission published a study of distribution costs of building materials which all but named the handlers whose markups help to pack the final prices of lumber, paints and varnishes and cement; it described the basing point systems of pricing which absorb high transportation charges. The "OHR" might recommend changed methods of construction whose effect would be to integrate the work done by contractors so that some materials distributors would be by-passed. It might try to find out whether it is cheaper to order materials directly from the mill. It might set up experimental assembly lines to turn out parts of houses. Charged with "stabilization of employment and incomes" in the building industry, it might recommend changed hourly pay scales, or yearly wages.

The technical men who worked out the details of the bill and the Congressmen who introduced it are fully aware of the size of the bite. They know that practices which raise costs usually have beneficiaries likely to resist change. On the other side of the picture, they point out that to the extent "OHR" succeeds in actually reducing costs, the market for housing will be widened. An old TNEC monograph suggested that research into housing costs could well reduce costs 50 per cent; those who are pushing the idea are ready with dozens of spots in which costs might be reduced, which add up to large reductions indeed. Given all this, builders would have the promise of much greater volume even though profits per job would be reduced.

Plan Not Opposed

Granting that ultimate effects would be to greatly enhance building volume, it would be unusual were particular elements in the industry, therefore, to accept what seemed to them to be immediate sacrifices. Yet, curiously, industry either supports the bill or takes no stand. The only opposition thus far expressed is on a relatively minor point: speculative builders think that "OHR" ought to be set up independently or placed under the Department of Commerce rather than be made part of NHA as the bill proposes.

Obstacles Ahead

Lack of present opposition by those whose interests would counsel preserving existing building practices has this back of it:

First, it is hard to come out against research itself. It is equally hard to

(Continued on page 10)

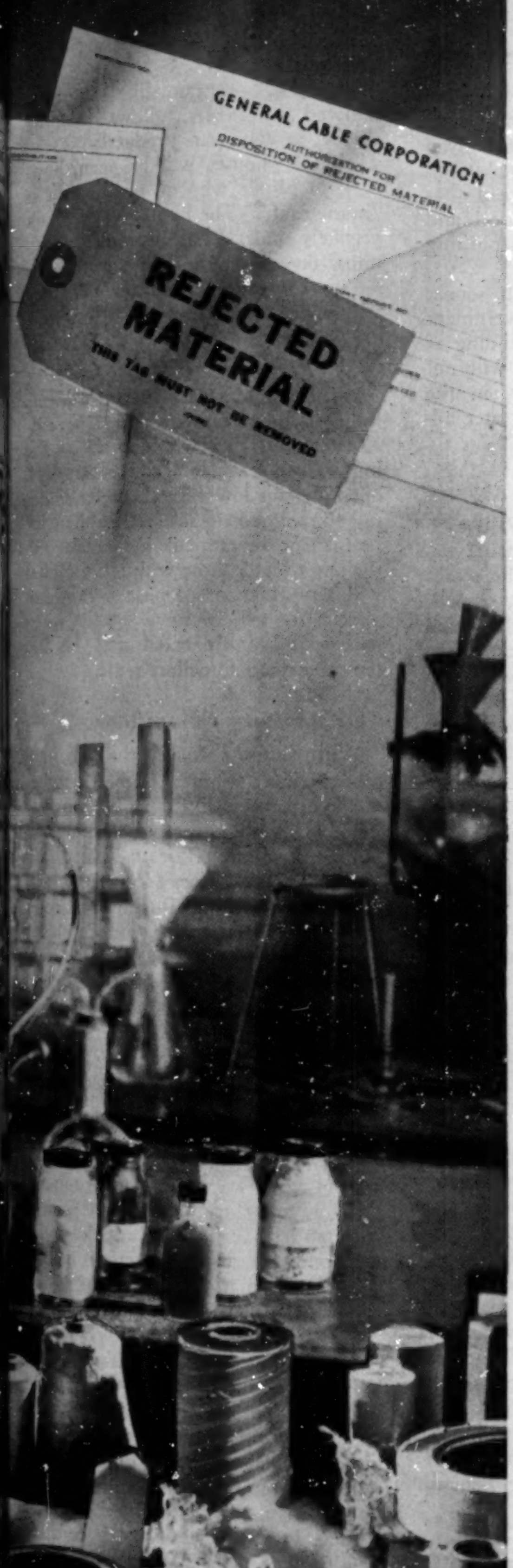
"I'm afraid all I can say for our Art Preservation Officer is that he knows what he likes . . ." —Drawn for the RECORD by Alan Dunn

QUALITY CONTROL . . . . . BY GENERAL

ACCEPTED MATERIAL
READY FOR USE
DESCRIPTION
QUANTITY
DATE
LABORATORY REPORT No.
RELEASED BY
(over)
REPORT OF INCOMING MATERIALS
RECEIVING NO.
MATERIAL
DATE RECEIVED
SUPPLIER
CONSIGNOR
PURCHASE ORDER NO.
MATERIAL REQ. NO.
CAR NO. AND INITL.
CAPACITY
HOL

Literally hundreds of materials—among them metals, fabrics, lacquers, asphalts, synthetic polymers—are used in making modern wire and cable. The chemical, physical, metallurgical tests of all incoming raw materials for each plant are "double-checked" in the Control Testing Laboratory located at that plant. All 9 of these laboratories operate, however, under direct and close supervision of the General Cable Research Laboratory—the largest, it has been said, "in the world" devoted exclusively to wire and cable research.

L CABLE'S OWN "BUREAU OF STANDARDS"


GENERAL CABLE CORPORATION
AUTHORIZATION FOR DISPOSITION OF REJECTED MATERIAL
REJECTED MATERIAL
THIS TAG MUST NOT BE REMOVED

GENERAL CABLE
LABORATORY

Assurance of standardized quality in the electrical wire and cable products supplied by General Cable starts with our firm control of raw materials. To insure absolute uniformity at all 9 manufacturing plants, each material used is accepted or rejected by the "Control Testing Laboratories" situated in each plant, to specifications established by the General Research Laboratory at Bayonne. The time of an entire Bureau of the General Research Laboratory is devoted to the setting of these standards and the devising and supervising of uniform tests to enforce them. Under such a program one does not have to hope for or demand quality control — one gets it.

GENERAL CABLE CORPORATION

Manufacturers of Bare and Insulated Wires and Cables for Every Electrical Purpose

THE RECORD REPORTS

(Continued from page 7)

contradict a proposal to house more people at lower prices or rentals. But a Washington trade association man observes that you oppose not research but the promulgation of particular findings. Suppose, he says, "OHR" were to discover that one kind of brick, made by a particular group of companies, was cheaper and better than another. The makers of the poorer bricks would rush to their Congressmen, complaining that "OHR," perhaps in malice, perhaps by corruption, perhaps out of bureaucratic habit, was trying to ruin their industry. The Congressmen would inquire. The methods of research would be explained to them and they would relay the explanations to their brickmaking constituents, who, not quite convinced, would bring fresh charges. The Congressmen would be forced, at last, to introduce a bill that any employee of "OHR" maligning the quality of XYZ brick be barred from all government employment. Examples of that sort of thing in the experience of existing agencies abound. The Bureau of Standards takes great care in publishing information on commercial materials; the Department of Commerce last year lost some appropriations money after it published an article on the effect of taxes on competition between oleo and butter.

Second, those who would be affected by "OHR" do not yet appreciate that support for the bill is growing. They know that hundreds of bills embodying all kinds of hobbies, ideas and interests are introduced at every session and they are not sure that the present one is to be taken seriously.

Interest Gathers

As a matter of fact, the bill is gathering interest. At a hearing of the Senate Postwar Committee sub-group on housing, Chairman Taft himself seemed favorable except that he thought research "should be confined strictly to technical matters which perhaps are not as well covered by research in the housing industry as in more concentrated industries." La Follette was impatient to get some kind of "OHR" going quickly instead of waiting until every detail had been worked out. Ellender, too, wanted to get started. Taft and Ellender wondered whether "OHR" ought not be set up simply through amendment to the National Housing Act. Support is growing, too, in the Senate Education and Labor Committee which, probably, will be given jurisdiction. Finally, indirect support is coming up in another quarter: Beardsley Ruml has not given up his efforts to put building on an all-year-around basis, but instead has made it part of a broad "fiscal and monetary policy" which he is pushing with energy.

This suggests that there will, sooner or later, be an agency of government trying to promote volume building at lower costs. The battle line will not be drawn, in all prabability, in the framing of legislation but in later administration.

WPB Policy Shifts

The Facilities Bureau of WPB each day files little cards telling what decisions have been made on the scores of applications to build roads, schools, churches, etc. A year ago, the word "denied" was typed on almost every one. Gradually—as contractors themselves learned what kind of applications to make—the proportion of rejections dropped. Very recently WPB started to allow construction which, not long ago, would have been rejected almost automatically.

What has taken place is a shift in emphasis within the Bureau. To date the prevailing test has been that of military necessity. Then as some materials loosened, members of the Bureau asked Nelson whether L-41 ought not be changed to allow some civilian construction such as churches, schools and stores. Perhaps in the expectation that it would lead to another row with the Armed Services, perhaps for other reasons, Nelson did not want to revise the order just yet. But he agreed the text of the order itself contains criteria on construction, such as civilian morale, which to date have been given little weight. Regional officials swiftly were informed that they could allow some building, (1) if critical materials were not used, and (2) if labor were not drained from war industry. These are precisely the conditions under which Nelson has proposed civilian construction in general, against the loud protest of the Army. Cases in which no need is shown are still being denied.

H2 Program Drafted

At least WPB and NHA have worked out a program for other housing than to shelter workers newly arrived in war production centers. Actual building under this program, known as "H2", is likely to get started in the last quarter of this year, with an expected quarterly volume of 25,000 units at about $5,000 per unit. WPB had approved the idea in April but the lumber shortage delayed getting down to details.

The "H2" program, like the others fathered by NHA, allows building chiefly in the war production areas. The "H2" houses will be open, however, to people who do not qualify as "in-migrants." The homes will be built privately under FHA insurance. Maximum floor areas and like restrictions on use of materials indicate that they will be rather snug.

Apartments Preferred

NHA would perfer that apartments rather than private dwellings be constructed, but that will depend on the builders. In many localities, contractors, operating on low capital, prefer building for immediate sale rather than for permanent investment in rentals. On the other hand, those with more capital will have tax considerations to think about: to sell in at a profit when profits are highly taxed may be less tempting than to collect rents.

New Advisory Committee

With some changes, the informal construction committee of the Chamber of Commerce is likely to be formally initiated as an advisory committee to WPB's Facilities Bureau. John Lord O'Brian, who advises Nelson on matters of law, told the Bureau and committee members that the informal set-up gives no protection against possible suit under the Sherman Act. The committee now being organized will have three panels, respectively representing the architects, the engineers and the contractors. Materials producers and other interests are variously represented through the agency. Because WPB rules, worked out long ago with the help of Department of Justice, require that advisory committees represent large and small business equally, with no preference to any section of the country, the matter of filling in names is hard. O'Brian must approve the list.

Some thought had been given as well to setting up a housing division within WPB. The industry wanted it and suggested that its organization would give builders and others a definite place at which to get information. But somewhere among top executives there is opposition, possibly on legal grounds, so that, instead, the materials control division within the Facilities Bureau is likely to handle materials for transitional construction.

GI Changes Proposed

Builders are likely to ask for modification of the GI Bill of Rights which limits to two years the period in which

(Continued on page 12)

five minute forum on plastics

Contrary to popular conceptions, plastics and metals actually "get along" very well. In fact they have much in common.

Like metals, plastics can be extruded, cast, drawn, and molded. But some plastics are better adapted to certain fabrication techniques than others. The important point is to use them in the right way.

In certain applications plastics do replace metals. This is not mere substitution, for plastics may serve where metals cannot. Also, plastics often complement metals by adding beauty, protection or warmth to the touch.

Important to remember is that both metals and plastics are selected for service according to the job to be done. When high strength or flexibility or corrosion resistance is required, a specific metal —often a special alloy—may be indicated.

As with metals, just so with plastics. Each has its own characteristics—each has its own set of properties defining the field in which it can best serve.

Styron, one of the important plastics produced by Dow, is light in weight, extremely lustrous and possesses exceptional high-frequency electrical insulating value, plus resistance to acids and alkalies. *Ethocel*, on the other hand, is notable for its strength—its ability to withstand rough usage even at extremely low temperatures.

WHAT HAVE PLASTICS IN COMMON WITH METALS?

Saran, to cite another type of Dow plastics, is extremely ductile, which permits it to be formed into tubing, pipe, and woven into such products as fabrics, window screen and even rope.

It is apparent from these examples that plastics not only have much in common with metals, but, in their own way, serve a broad and constantly expanding field of usefulness.

Dow Plastics include
Styron, Saran, Saran Film, Ethocel and Ethocel Sheeting

DOW

CHEMICALS PLASTICS MAGNESIUM

INDISPENSABLE TO INDUSTRY AND VICTORY

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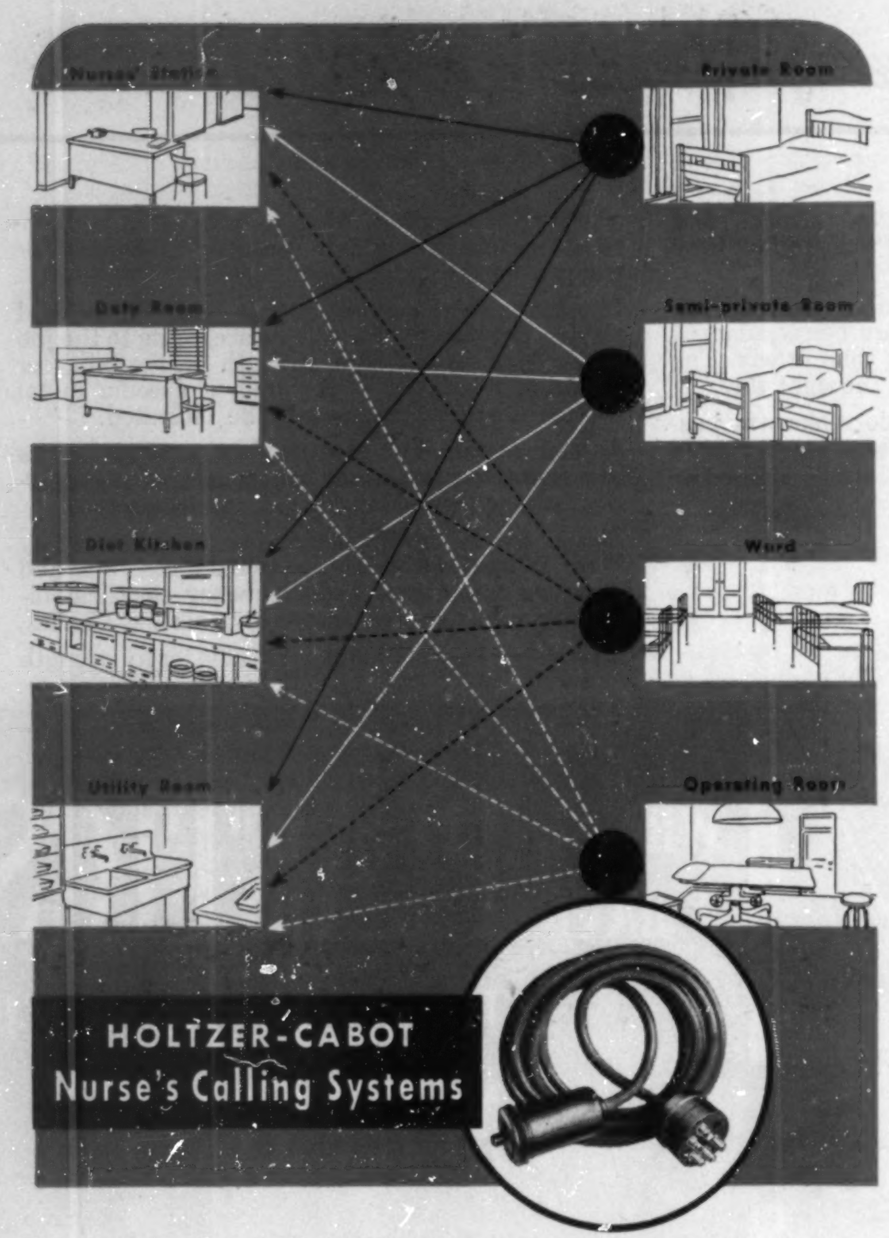
New York • Boston • Philadelphia • Washington • Cleveland • Detroit • Chicago • St. Louis
Houston • San Francisco • Los Angeles • Seattle



Holtzer-Cabot Nurses' calling systems quickly summon the nurse to a patient's bedside. Pressure upon a button sounds buzzers and illuminates lamp signals at selected points. Accidental dropping of button will not reset or detach plug. However, if a plug should become accidentally detached, lamp signal lights and buzzer sounds continuously until plug is replaced.

Holtzer-Cabot is equipped to supply complete Nurses' Calling systems . . . as well as other signaling equipment, such as, Phonocall System, visual and voice paging, staff registers, return calls, night lights, etc. . . . for new installations or as extensions to existing systems. Our engineers will gladly analyze your needs, make recommendations and supervise installations. Their services are always available without obligation. Ask for their help.

Catalog, giving complete information on Holtzer-Cabot Hospital Signaling and Communication equipment, will be sent on request.

One responsibility—Satisfactory operation of complete systems.

HOLTZER-CABOT
Division First Industrial Corporation
Pioneer Builders of Signal Systems Since 1875
400 Stuart St., Boston 17, Mass. Engineers Located in Principal Cities

THE RECORD REPORTS

(Continued from page 10)

veterans may borrow up to $2,000 as a down payment on FHA houses. It is doubted that industry could handle a demand telescoped within so short a period. Periods up to ten years are suggested.

Amortization on Griddle

Builders also are talking about extending amortization of FHA houses to 35 or 40 years. They want the amortization period to be the same as for government construction, which carries lower depreciation costs. The builders contend that equalization of these charges would make it possible for them to compete on rentals with public building. However, interested Congressmen consider that this would give a not-too-closely-concealed subsidy to the builders and they doubt that a sufficiently strong case for a subsidy has been developed.

Materials Market

The materials market shows only minor changes. Lumber remains tight but there is no evidence yet that fighting in France has made things worse, as had been widely forecast. Gum will no longer be available for flooring; instead, the available supply is being given to the furniture makers. Brick is in reasonable supply generally, but not for many localities. There is no possible method for redistributing existing stocks without loading new transportation expenses into prices. Efforts to promote local production are likely.

OWI is opening its annual campaign persuading home owners and landlords to do their insulating now; fuel shortages this winter are threatened just as in 1943. Builders' hardware is generally available. Supply of plumbing materials is adequate. Radiators are short, largely reflecting labor shortages at the foundries. WPB officials who watch these industries doubt that they will prove bottlenecks as construction picks up.

◆ ◆ ◆

WPB NOTES

Filing Instructions

Instructions for the filing of WPB Form 617 for permission under L-41 to acquire or construct facilities have been revised, WPB has announced.

The revised instructions apply to the filing of the form only. One addi-

(Continued on page 14)

GRACIOUS LIVING . . .

On a Modest Scale

As an interpretation of gracious living, the "home in the country" need not be extravagant in size or price. It can find expression in small houses designed with taste and attractively situated. New forms of transportation, together with the trend toward decentralization of industry, promise interesting developments in the "pocket" estate.

Stran-Steel framing systems provide an excellent building medium to accomplish this concept. They are flexible in application—lend themselves to economies of modern building technique—impart durability and permanence to homes that stand for a way of life.

Equally adaptable to apartments, large scale housing projects, commercial buildings and specialized structures, Stran-Steel is well qualified to serve the new era of building.

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UNIT OF NATIONAL STEEL CORPORATION

Guth

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QUICK-LITER*

The Original Starterless

FLUORESCENT!

Two Years of Rigid Testing Have Proved Its Worth!

The GUTH QUICK-LITER was originated for War Plants; where high maintenance costs due to Starter-Switch troubles, and variable line-voltage conditions, made *Starterless* Fluorescent desirable. Detailed performance records were maintained, so that every claim made for QUICK-LITER has been *proved* by use.

A valuable report on the results of these tests is now available. Write for your copy today.

No Starter Switches
Maintenance cost is lower, and the problem of checking for "dead" Starters is eliminated.

Lights Instantly
At the flick of the switch—there's light! No flickering, flashing, or waiting.

Long Lamp Life
QUICK-LITER gets maximum usage from lamps.

Operates at Irregular or Low Voltage
QUICK-LITER starts and operates at as low as 85 Volts.

Would Operate in an Ice Box
QUICK-LITERS start and operate as low as 0° F. Temperature. Many are now in use in Alaska and the Aleutions.

Immediately Available
QUICK-LITERS can be shipped at once on AA-5, or AA-2-MRO, or higher priorities.

Guth *QUICK-LITER
TRADE MARK

The Edwin F. Guth Co. • 2615 Washington Ave. • St. Louis 3, Mo.

(Continued from page 12)

tional copy is now asked for, making a total of four copies to be filed rather than three, but no change has been made in the form itself or in the information asked for where the filing of the form is required.

The changes in filing instruction are as follows:

All WPB Form 617 applications, except those specifically indicated for filing elsewhere, are now to be filed with the local WPB field office. Applications for certificates of necessity where tax amortization privileges are requested, which are filed simultaneously with Form 617 applications, will likewise be filed with the local WPB field office rather than with WPB at Washington.

Unchanged are filing instructions for the following excepted type of projects: for projects financed by the War Department, the Navy Department, the U. S. Maritime Commission, or by the Defense Plant Corporation with the sponsorship of one of these agencies, the applicant will check with the particular agency involved to determine where to file.

Applications for farm construction, including farm buildings, continue to be filed with the county agricultural conservation committee having jurisdiction over the site.

Applications involving grants of federal funds continue to be filed with WPB in Washington.

Copies of the revised instruction sheets for the filing of Form 617 are now available at all WPB field offices.

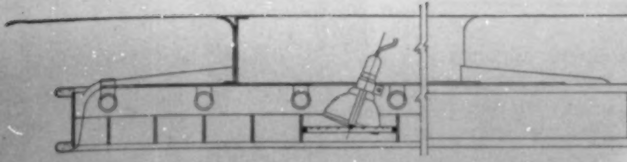
L-41 Interpretation

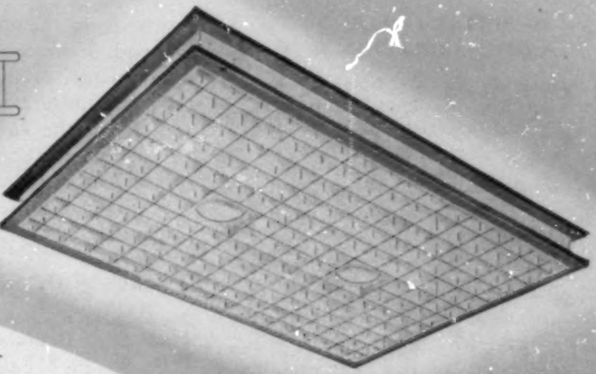
A more detailed definition of "the installing of equipment and fixtures," Paragraph (b) of Order L-41, has been issued by WPB in Interpretation 9. Listed specifically as construction and governed by the restrictions of L-41, are the following kinds of installation:

1. Any piece of equipment or fixture which is attached to the plumbing system of a building.
2. Any piece of equipment or fixture which involves putting new wiring in a building.
3. Any piece of equipment or fixture for which a base or foundation must be built.
4. Any piece of equipment or fixture cemented to a floor or wall of a building.
5. A furnace or stoker connected by pipes or flues or wiring to the building.

Not considered construction under L-41 are installations of counters,

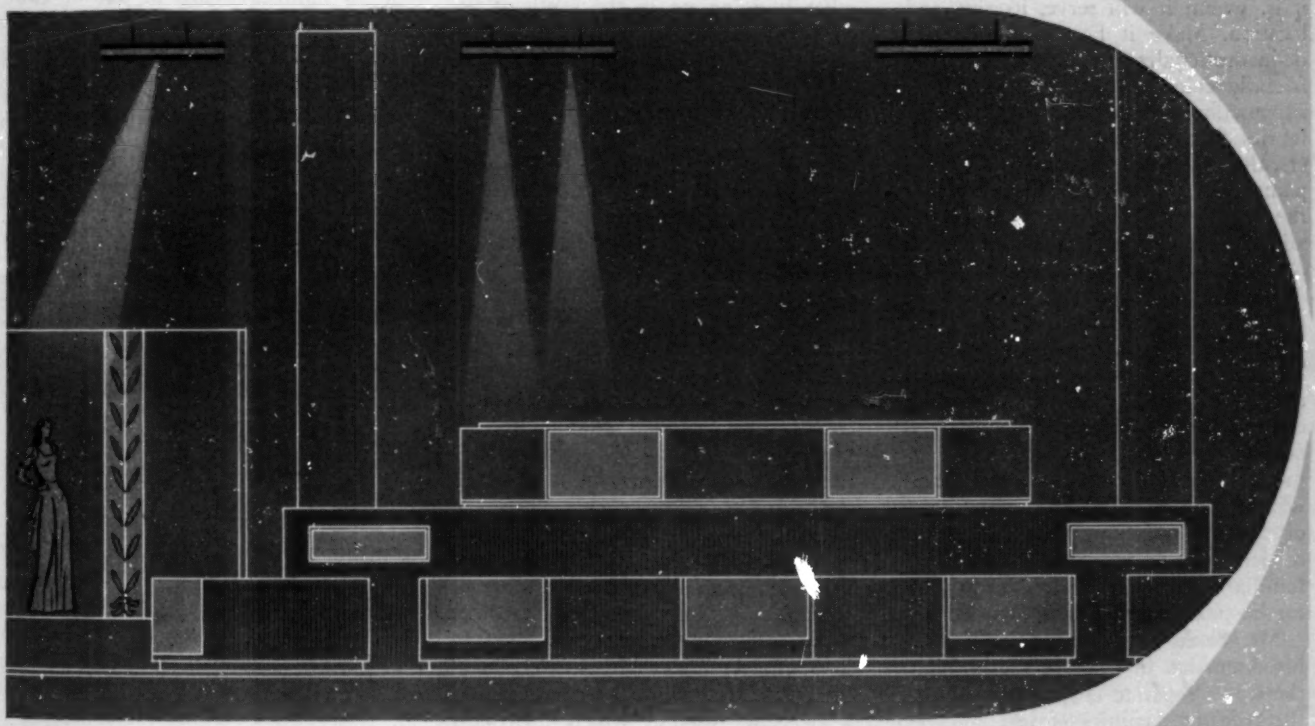
(Continued on page 124)

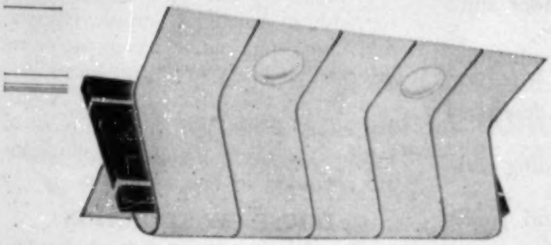




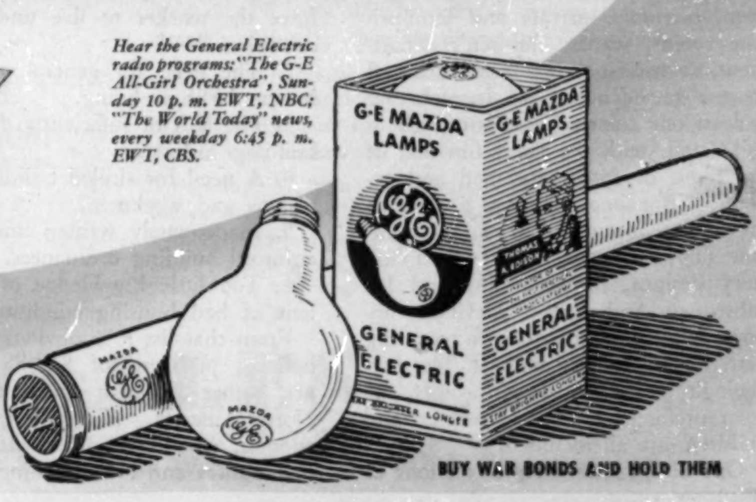
Section of suggested lighting unit, right. Utilizes fluorescent lamps with their large area, low-brightness for general illumination, and adjustable spotlights or reflector lamps to feature special displays. Has "egg-crate" louvers and translucent sides.

dynamic...





Hear the General Electric radio programs: "The G-E All-Girl Orchestra", Sunday 10 p. m. EWT, NBC; "The World Today" news, every weekday 6:45 p. m. EWT, CBS.


G-E MAZDA LAMPS
GENERAL ELECTRIC
G-E MAZDA LAMPS
THOMAS A. EDISON
GENERAL ELECTRIC
STAY BRIGHTER LONGER
MAZDA
MAZDA

THE CONSTANT AIM OF G-E LAMP RESEARCH IS TO MAKE G-E LAMPS *Stay Brighter Longer*

BUY WAR BONDS AND HOLD THEM

REQUIRED READING

HOSPITAL COLOR AND DECORATION

By Raymond P. Sloan. Chicago 5 (161 W. Harrison St.), Physicians' Record Co., 1944. 7 by 9¾ in. xvi + 253 pp. illus. $3.75.

With hospitals occupying a prominent place on the roll of postwar building needs, and the awareness of color as a therapeutic measure rapidly growing, the editor of *The Modern Hospital* has given us a book as interesting as it is timely. Mr. Sloan writes with sure knowledge of his subject; he writes, also, with a delightful informality and liveliness of style.

Stressing the need for simplicity and practicality in hospital interiors, Mr. Sloan gives as the first step in planning the decorative scheme of a hospital the determination of the type of hospital it is, whom it will serve, its size and location. Make it homelike, he says; de-institutionalize it by substituting friendly color for the traditional and supposedly antiseptic white. But choose fabrics that will not prove dust-catchers, that will not fade; choose washable paints and wallpapers; remember that the cleanliness must remain though the antiseptic look and smell may be overcome.

"Beauty in hospitals is not difficult to achieve," Mr. Sloan says, "if we will observe certain fundamentals." The general decorating rules are as applicable here as anywhere else. A comprehensive plan must be worked out for the building as a whole, if harmony is to be achieved. Window and wall treatment, floor coverings, the use of color to make a room seem larger or smaller, warmer or cooler—these familiar decorating media are the same for hospital, house, factory or office.

Mr. Sloan has omitted nothing in his discussion of color in the hospital: there is a separate chapter for each of the various facilities—foyer, lounges, shop, corridors, private and semi-private rooms, wards, children's department, solarium, roof, offices and staff rooms, nurses' home, etc. In each case at least one color scheme is offered in full detail, with the main function of the room or rooms specified and explained. Bugaboos—such as a patient's inevitable counting of anything countable (flowers in wallpaper or upholstery designs, for example) and his subsequent and equally inevitable annoyance at the regularity of a recurring pattern—are warned against. The psychological effect of certain colors, the color preferences of men, women and children, are all included.

One of the most helpful sections of the book is the group of addenda at the end. Here we have a list of sun room plants, of plantings for the hospital grounds, arranged according to sections of the country; a color chart, and tables of suggested color schemes for each of the various patient accommodations; a large and varied reading list, and a careful index.

CITIES OF LATIN AMERICA

By Francis Violich. New York (330 W. 42nd St.), Reinhold Publishing Corp., 1944. 6⅛ by 9¼ in. xii + 241 pp. illus. $3.50.

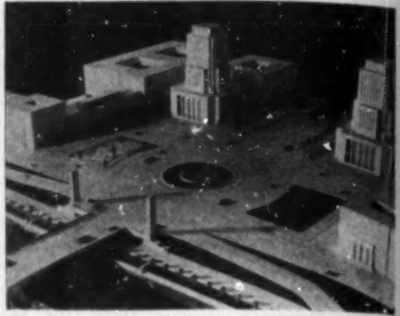
It is quite true, as Mr. Violich says, that much has been written about the development and planning of European cities, and little about those of South America. As architect and city planner, with a lively curiosity about what is going on to the south of us, Mr. Violich therefore decided to see for himself. Sponsored by the Columbia Foundation of San Francisco, he spent ten months traveling through the various South American republics, visiting housing developments, talking with fellow architects and planners and making friends with men and women of all types and classes. The results of his survey as presented in this book are a valuable contribution to our understanding of our "neighbors to the south."

Lavishly illustrated (especially for these wartime days), this book first of all gives a good over-all picture of South America. Everything is here: climate, topography, the people themselves, architecture, economic and social problems, health, habits, racial characteristics, standards of living.

Summing up a very excellent chapter on the social and economic problems to be met in providing good housing in Latin America, Mr. Violich highlights the following:

1. Low wages, which "virtually force the worker to live under slum conditions."
2. The need for general education in standards of living.
3. The lack of sufficiently developed building industry.
4. A need for skilled building technicians and workmen.
5. Inadequately written and poorly enforced building ordinances.
6. Too little knowledge of the extent of bad housing conditions.

From that list it is obvious that the housing problems of South America are rather different from those of North America. Slums here are bad enough, certainly, and a disgrace to the country and to our national pride, but those to the south would seem to be even worse. Imagine 16 families "living in a space about 30 feet wide by 80 feet deep, in a one-story building which enclosed a tiny courtyard!" Imagine 4000 people crowded into an area of about two square blocks in a "favella" type of one-story slum shacks or 30 families living in one or two-room cubicles along a narrow alley comprising a total area of about 50 by 100 feet!



Model for new railroad station and bridge over the Rio Tiete, Sao Paulo, Brazil. From "Cities of Latin America"

But on the black side of the ledger in Mr. Violich's opinion is the general planning of the Latin American cities, whose technicians, he says, have profited by a closer contact with Europe than we here have maintained. "The result has been the development of two divergent types of cities in the Western Hemisphere: those of the United States, impressive but ungracious; and those of the Latin American countries, historic and Old World-like, but thoroughly delightful and human."

Much of Latin American architecture also wins Mr. Violich's praise. That should come as no surprise to anyone who has seen G. E. Kidder-Smith's vivid photography of Brazil (e.g., ARCHITECTURAL RECORD, Jan. 1943, pp. 34-56). Mr. Violich calls particular attention to Argentina's apartment house design, which he says is "a challenge to the designers of the apartments in our own cities, for the free use of balconies, simple fenestration, and imaginative treatment of reinforced concrete structural forms."

A list of the principal Latin American cities, a bibliography, and a list of Latin American planning technicians are included in the appendix.

HOUSE CONSTRUCTION

Postwar Building Studies No. 1. London, H. M. Stationery Office, 1944. 6¼ by 9⅝ in. 152 pp. illus. 2s. New York 20 (30 Rockefeller Plaza), British Information Services. 60c.

Back in 1941 when the war was still relatively young and its outcome very much in doubt, the far-sighted

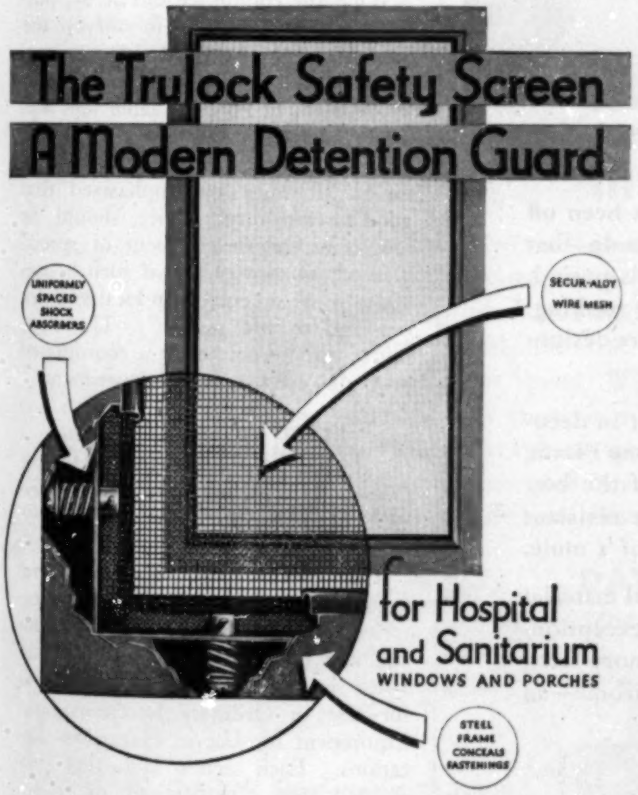
(Continued on page 28)

Official U. S. Navy Photograph

TRULOCK SCREEN GUARDS INSTALLED
IN MENTAL WARDS OF THIS BUILDING

Naval Medical Center
Bethesda, Maryland
Office of Paul Cret, Architects

The Trulock Safety Screen Guard is a modern window guard, offering greater security than that provided by the heavy wire grilles and bars used in mental hospitals, yet it has the appearance and utility of a residential screen. It does away with the bad psychological effect of barred windows; can be installed with equal security in old or new buildings, eliminates the necessity of insect screens, and its maintenance cost is extremely low.


The Trulock Safety Screen
A Modern Detention Guard
UNIFORMLY SPACED SHOCK ABSORBERS
SECUR-ALOY WIRE MESH
for Hospital and Sanitarium
WINDOWS AND PORCHES
STEEL FRAME CONCEALS FASTENINGS

SPECIFICATION TRULOCK SAFETY SCREEN GUARD

Where safety screen guards are specified or shown they shall be the TRULOCK SAFETY SCREEN GUARDS or equal.

They shall be constructed with steel channels of not less than No. 14 gauge with inner and outer casings of not less than No. 16 gauge metal.

Hinged type shall be provided with 12 gauge steel channel sub-frames with concealed hinges and approved locks of bronze.

Shock absorbers of a minimum capacity of 175 pounds per one-half inch movement shall be installed around the perimeter of the screen frame on approximately 8" centers. They shall have brass pistons and pins with heavy cadmium plated compression springs, screws and washers.

The wire mesh shall be of SECUR-ALOY wire (special composition of stainless steel alloys) compounded to produce high corrosion resistant material of not less than 125,000 pounds tensile strength per square inch and woven into mesh of open area of 43% with double crimped crossings and a tensile strength of not less than 800 pounds per linear inch.

The four edges of the mesh panel for their entire length shall be wrapped around continuous steel bars the full length of each edge, and inserted within the pistons, being held therein with bronze pins passing through the entire assembly.

Painting: All frame and sub-frame members shall be primed before assembly with a coat of metallic paint and then finished with two coats of baked on enamel. The mesh to receive one coat of Black Japan.

AUSTRAL SALES CORP.

101 PARK AVE., NEW YORK, N. Y.

Post-war
Flexachrome
is Ready

Flexachrome in the offices of the Ohio Bell Telephone Co., Canton, Ohio

Since 1942 Flexachrome Plastic Tile Flooring has been off the market. Its constituent materials had a war job to do—but Tile-Tex laboratories have not been idle during this period. They have developed an even more flexible, better looking, longer lasting Flexachrome for those buildings you are designing now that will be built after V-Day.

In pre-war days when architects wanted the *finest* in decorative resilient tile flooring, they specified Flexachrome Plastic Tile. Flexachrome's principal ingredient is one of the best known plastic resins—proof against grease, highly resistant to most acids and alkalis, and tough as the hide of a mule.

In floor areas where you need a strikingly beautiful material that combines extraordinary ease of cleaning with exceptionally long wear, specify the new Flexachrome. For more facts, ask us to send you the colorful pamphlet "Flexachrome—an Exclusive Tile-Tex Product."

★ The Tile-Tex Company

101 Park Avenue, New York City • Chicago Heights, Illinois

★ ★ ★ ★ ★ ★ ★ ★

REQUIRED READING

(Continued from page 26)

British Ministry of Works began to plan for the ultimate reconstruction of already much-bombed Britain. A number of committees was appointed to study and report on the major problems likely to affect building after the war. These reports, of which the present volume is the first to be published, will include plastics, plumbing, lighting, heating and ventilation, school construction, etc. The series as a whole should present a very helpful over-all picture of the British building field as it was before the war and as it is likely to be in the postwar period.

The report on house construction was drawn up by an interdepartmental committee appointed by the Minister of Health, the Secretary of State for Scotland and the Minister of Works. It is divided into three parts: (1) Suggested Basic Technical Considerations of House Construction; (2) Alternative Forms of Construction Used in the Inter-War Period; (3) Notes on Materials. The appendix gives recommendations for the use of No-Fines Concrete.

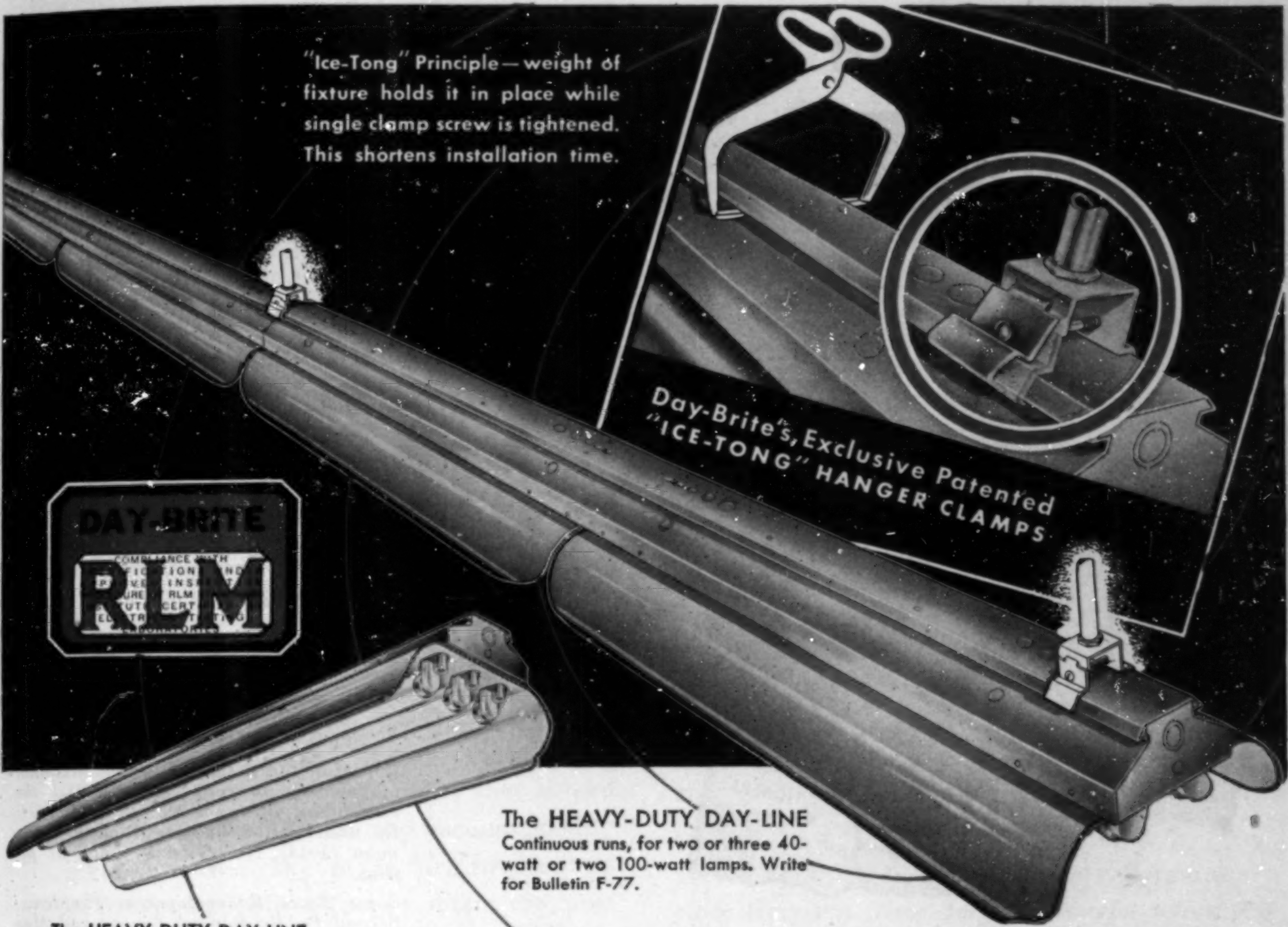
What the committee did at the outset of its study was to survey the methods of house construction adopted after the last war to meet the similar problem of housing, labor and materials shortages. From this survey came certain conclusions, among them: "It must be emphasized that good architectural advice should be sought in the development of special methods of construction if such houses are to prove acceptable to local authorities and to the public." The committee also recommends a coordinated program of research and experiment.

LIST OF INSPECTED ELECTRICAL EQUIPMENT

Chicago 11 (207 E. Ohio St.), Underwriters' Laboratories, Inc., 1944. 6 by 8½ in. 417 pp.

This most recent semi-annual revision of the Underwriters' Laboratories list is, as usual, complete, concise and easy to use. The list is divided into two sections: Equipment for Use in Ordinary Locations; and Equipment for Use in Hazardous Locations. Each section is further subdivided into classifications of equipment such as air conditioning apparatus, attachment plugs, circuit breakers, etc. Methods of classification and labeling are explained for each type of equipment. The index is detailed and fully cross-referenced.

(Continued on page 30)


"Ice-Tong" Principle—weight of fixture holds it in place while single clamp screw is tightened. This shortens installation time.
Day-Brite's, Exclusive Patented "ICE-TONG" HANGER CLAMPS
DAY-BRITE
RLM

The HEAVY-DUTY DAY-LINE
Continuous runs, for two or three 40-watt or two 100-watt lamps. Write for Bulletin F-77.

The HEAVY-DUTY DAY-LINE
Single unit, for two or three 40-watt or two 100-watt lamps. Write for Bulletin F-77.

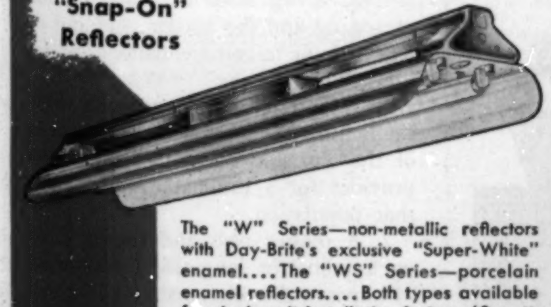
Two Effective Types of Industrial Lighting Fixtures

Heavy-duty RLM Day-Line Industrial Fixtures are again available with porcelain enamel reflectors—plus DAY-BRITE'S exclusive "ice-tong hangers" which assure low-cost installation speed. With these unique hangers, it is unnecessary to spot exact center locations. For any type of suspension, they are merely positioned parallel with the length of the fixture channel.

The Day-Line Series "W" and "WS" Industrial Fixtures are furnished with either porcelain or non-metallic reflectors. Both are RLM approved. (See description below.)

Get full information on all types of Day-Brite Fluorescent Fixtures. Contact your nearest Day-Brite Engineering Representative, or write for descriptive Bulletins.

DAY-LINE "W" and "WS" Series with "Snap-On" Reflectors



The "W" Series—non-metallic reflectors with Day-Brite's exclusive "Super-White" enamel.... The "WS" Series—porcelain enamel reflectors.... Both types available for single-unit installation in two 40-watt, three 40-watt and two 100-watt models.... Write for Bulletin F-76.

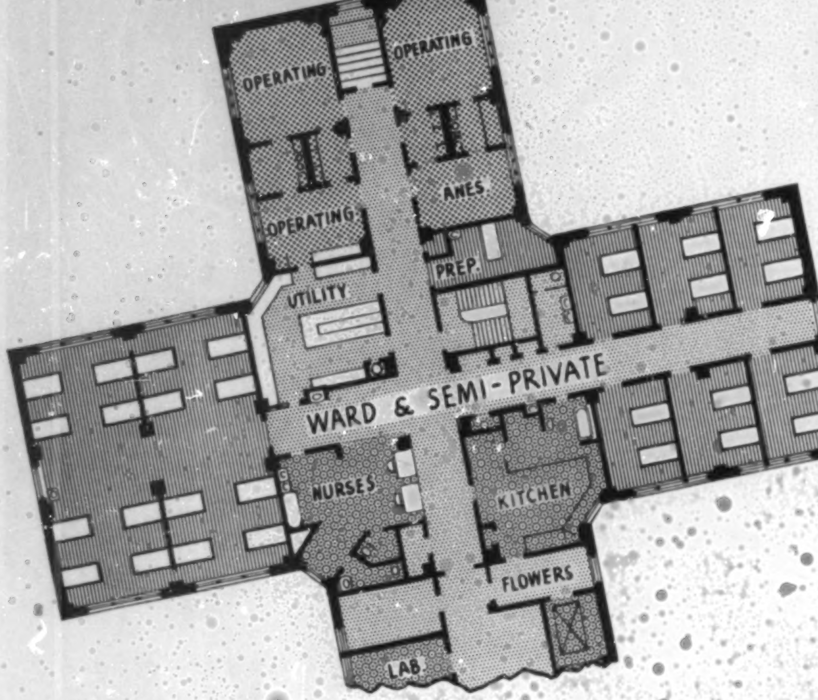
DAY-BRITE LIGHTING, INCORPORATED
5464 Bulwer Avenue... St. Louis 7, Missouri

DAYBRITE
The Sign of Quality
Look for this Label

Day Brite
LIGHTING FIXTURES

Nationally distributed through all leading electrical supply houses

We recommend these floors for HOSPITALS



▨ **ASPHALT TILE** for the halls, stair landings, and utility rooms where economy, resistance to wear, and attractiveness are desired. Armstrong's Asphalt Tile is unaffected by alkali, may be used on concrete subfloors in contact with the ground.

▥ **LINOTILE (OIL-BONDED)** is the logical floor for the wards and preparation room, as well as public areas. Good looking and quiet underfoot, this material is unusually durable. Withstands loads up to 200 lbs. per square inch without indentation.

▩ **GREASEPROOF ASPHALT TILE** is essential for diet kitchens and nurses' laboratories and workrooms. Besides being resistant to grease, oil, and fats, this floor has all the advantages of Standard Asphalt Tile—including resistance to moisture and alkali.

▦ **CONDUCTIVE ASPHALT TILE** reduces the danger of explosions in operating and anesthetizing rooms, by dissipating static electricity. Has other advantages of Standard Asphalt Tile—can be used on suspended or on-grade floors.

P.S. All these floors are sanitary, easy to maintain, quickly installed, and are available today. See Sweet's or write for full data to Armstrong Cork Company, Resilient Tile Floors Department, 2408 Duke St., Lancaster, Pa.

INDUSTRIAL ASPHALT TILE
STANDARD ASPHALT TILE
GREASEPROOF ASPHALT TILE
LINOTILE (OIL-BONDED)
CONDUCTIVE ASPHALT TILE

ARMSTRONG'S
RESILIENT
TILE FLOORS

REQUIRED READING

(Continued from page 28)

Mc MICHAEL'S APPRAISING MANUAL

A Real Estate Appraising Handbook for Use in Field Work and Advanced Study Courses. By Stanley L. McMicael. New York (70 Fifth Ave.), Prentice-Hall, Inc., 1944. Third Edition. xvii + 715 pp. 4⅝ by 7¾ in. illus. $5.00.

This third edition of the "Manual" has been extensively revised, with several out-dated chapters eliminated, nine new chapters added, and the whole book, including the ever-useful appendix, brought up to date. The new chapters include one on "Trends Indicating Future Appraisal Practice," and another on "The FHA System and Its effect on Appraising Techniques."

CITY PLANNING

NEW YORK

Report of the Acting State Commissioner of Housing to the Governor and the Legislature of the State of New York. By Ira S. Robbins. Legislative Document (1944), No. 47. 6 by 9 in. 51 pp. illus.

Some Basic Redevelopment Problems: Second Public Report, Zoning and Master Plan. By the Committee on Civic Design and Development, New York Chapter, A.I.A. 8¼ by 10¾ in, 21 pp.

The first of these two booklets is a factual report on what New York's Division of Housing has accomplished in the past year. The record is a good one, particularly in the extensive planning for postwar housing. Working with local housing authorities in all parts of the state, the Division has built up a "reserve shelf" including 16 projects for which contracts calling for loans totaling $90,970,479 have been signed.

The A.I.A. pamphlet is concerned, on the other hand, only with New York City. First pointing out the inadequacies of present zoning regulations, it discusses the future status of zoning and the master plan and offers specific recommendations as follows:

1. Adoption of a long-range, realistic assumption for the total population of the city and a master plan which provides for a rational distribution of that population.

2. A master plan and zoning based on a policy of long-range adjustment to improve the relationships of occupational to residential areas, and a more efficient and realistic allotment of the area of land for any single use in a zone.

(Continued on page 32)

PENICILLIN

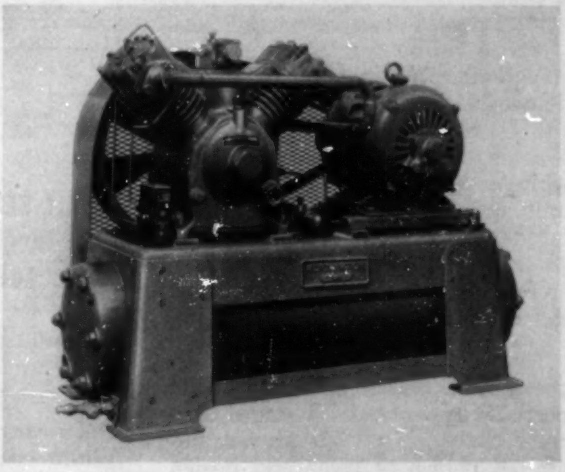
To Make Penicillin . . . Or Air Condition a Hospital

THE same Worthington skills that helped provide refrigeration and vacuum-making machines for the mass production of penicillin . . . will help you obtain the most efficient, trouble-free air conditioning system in your hospital.

In making penicillin, Worthington refrigeration compressors, vacuum pumps and steam-jet ejectors are used to "freeze-dry" many gallons of mold solution, and concentrate it. Throughout the process, the air must be purified, and both temperatures and humidities carefully controlled.

In air conditioning your hospital, you will be surprised at how many essential parts of an air conditioning system Worthington can supply . . . including steam turbines, Multi-V-Drives, refrigeration valves and fittings, pumps and compressors. Broader engineering experience, and in many cases *complete unit responsibility*, have contributed to economical maintenance and dependable, long-lived performance.

Worthington Pump and Machinery Corporation, Harrison, New Jersey. District offices and Representatives in principal cities.



Worthington Freon 12 condensing unit, provided in several models and sizes from 2 to 100 hp. Worthington offers a complete line of refrigerating and air conditioning equipment.

AR4-36

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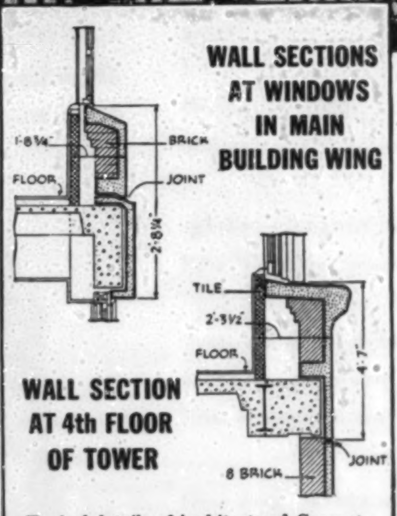
WORTHINGTON

REFRIGERATION **AIR CONDITIONING**

U. S. NAVAL MEDICAL CENTER
wrapped in
thin pre-cast
ARCHITECTURAL
CONCRETE
SLABS

U. S. Naval Medical Center, Washington, D. C. Designed by Vice Admiral Ben Moreell, Chief, Bureau of Yards and Docks, U. S. Navy. Consulting architect, Paul P. Cret; Contractor, John McShain, Inc., both of Philadelphia. Slabs by Federal Seaboard Terra Cotta Corp., N.Y.


WALL SECTIONS AT WINDOWS IN MAIN BUILDING WING
1'-8¼"
BRICK
FLOOR
JOINT
2'-8¼"
TILE
2'-3½"
FLOOR
4'-7"
WALL SECTION AT 4th FLOOR OF TOWER
JOINT
8 BRICK

Typical details of Architectural Concrete Slabs on U. S. Naval Medical Center.

THE FITNESS of Architectural Concrete Slabs for hospital construction could hardly be better demonstrated than by their use on the U. S. Naval Medical Center, Washington, D. C. The glistening white exteriors of the 20-story main unit and subordinate buildings are faced with over 400,000 sq. ft. of these thin, pre-cast reinforced concrete slabs in over 500 different shapes and sizes.

Made of selected aggregates exposed in a matrix of Atlas White portland cement, Architectural Concrete Slabs permit an almost unlimited choice of color and design for interior as well as exterior walls. They are only 2 to 2½" thick, can be cast in sizes up to 100 sq. ft. or more, and shaped in curves, channels and angles to fit building contours. Joints are minimized, and time and cost of erection reduced.

For full information on Architectural Concrete Slabs, fine Terrazzo and other applications of Atlas White cement to better building, see our catalogues in Sweet's, or write to Atlas White Bureau, Universal Atlas Cement Company (United States Steel Corporation Subsidiary), Chrysler Bldg., New York 6, N. Y.

OFFICES: *New York, Chicago, Albany, Boston, Philadelphia, Pittsburgh, Minneapolis, Duluth, Cleveland, St. Louis, Kansas City, Des Moines, Birmingham, Waco.*

AR-ACS-47

ATLAS WHITE CEMENT
For pre-cast ARCHITECTURAL CONCRETE SLABS

REQUIRED READIN

(Continued from page 30)

3. A master plan which integra the several separate, city-wide pl which govern schools, health servic and other public services with the ci wide plan of private land use.

4. A master plan which integra the city-wide plan of parkways, e press highways and thoroughfa with the city-wide plans of all oth elements.

5. City aliveness to the challen offered by the nationwide moveme for large scale reconstruction as means to removing the cause of d terioration.

6. A master plan which provides f long-range gradual changes in t process of the readjustment of the cit land uses through time-zoning.

ILLINOIS

Planning Opportunities for Towns Illinois. By Karl B. Lohmann. Urba Univ. of Illinois, 1944. 6 by 9 in. 40 p illus.

Written to replace an earlier pa phlet by the same author, "A Co munity Planning Primer for Illinois now out of print, this brief disc sion of planning in Illinois is conc and very much to the point. Althou dealing specifically with only the o state, it applies to all sections of t country, and should have wide appe

Like its predecessor, this is a prim of planning. No phase is omitt from parks and playgrounds to hous and shopping centers. Based on t accepted principles of a comprehen and long-term community plan, deals at some length with what be done with city streets, traffic p lems and parking facilities; it stre the importance of taking into con eration now the probable increase air travel after the war, and descri the airport needs of both large small communities.

Professor Lohmann is probably his best in his discussion of the r dential area. With no wasted wo he sketches the ideals to strive for, plains the problems to be solved, suggests the solutions.

CALIFORNIA

The Need for Urban Redevelop Legislation in California. Los An Town Hall, 1944. 6 by 9 in. 34 pp.

One of the best features of booklet is the tabular compariso three of the well-known urban velopment proposals: the Greer-Ha plan published by the National P ning Association; the Urban Land

(Continued on page 142)

For Armchair Generals...

You see them in the veterans' hospitals. Men from the battlefields...fighting their greatest fight from their beds and chairs...the fight to get back in the world of useful men.

Medical skill is their mainstay. But friends and companionship and pleasant surroundings also help. That's why Sloane, in the designing and furnishing of hospital recreation rooms, solariums and lounges, works with such enthusiasm and interest.

We believe that jobs like this are every bit as much a part of our war effort as the outfitting of ships and building of aviation essentials.

Contract Division

W&J SLOANE

575 FIFTH AVENUE • NEW YORK

FOR BETTER BUILDING

A new heating system replaces baseboards with continuous radiant panels

BASEBOARD RADIATION

New possibilities for radiant heating in postwar buildings are being opened up by research work now far advanced in the Engineering Department of Crane Co., Chicago.

The new development is a panel heating system known as "baseboard radiation" since the heat is introduced through continuous radiant panels that replace the conventional baseboard in the room. These panels would be of suitable size and number to provide the amount of heat needed for the size of the room and the outdoor climate. The system has been under test for several years, both in the laboratory and in actual installations. Service records demonstrate a temperature differential of only 2 to 4 degrees from floor to ceiling in a room thus heated.

Baseboard radiation would permit complete freedom in use of floor and wall space and in arrangement of furniture and is said to make cleaning as simple as wiping an ordinary baseboard.

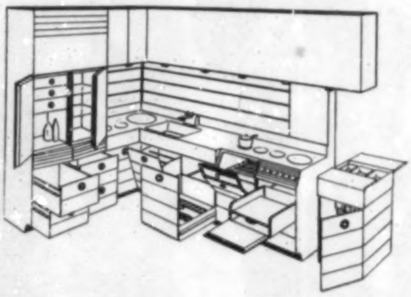
Compact kitchen design featuring novel food server (see diagram next column)

KITCHEN DESIGN

The design of a "maidless kitchen," with a number of interesting innovations, has been presented by Allegheny Ludlum Steel Corp., Brackenridge, Pa., for possible use and development by fabricators. Dohner & Lippencott, New York industrial designers, were commissioned by Allegheny Ludlum to create a completely integrated kitchen design, and the "maidless kitchen" is the result.

One of the most interesting features of the design is the food server unit, which will "serve an entire meal at one sitting, without maid help." The top of the unit is divided into ceramic or glass heated compartments to keep the food warm until ready to be served. Directly underneath is a large thermos unit for salads or frozen desserts. Another compartment contains a wire dish rack to hold clean dishes for serving, and soiled dishes at the end of the meal. This rack is slid intact from the cart into the dishwasher after the unit has been returned to the kitchen.

The server has a "roll-up" electric cord which can be attached to a convenient dining room outlet. Outlets for toaster, coffee maker, etc., are provided in the cart.



Other novel ideas in the proposed kitchen: inclined glass panel in the top of the oven door; soap flake dispenser built in as part of the faucet in the sink; a refrigerator that goes clear up to the ceiling, with the mechanics at the top, and a cool storage space for vegetables at the bottom; overhead cabinets that pull up and down like window shades to get the topmost shelf within easy accessibility.

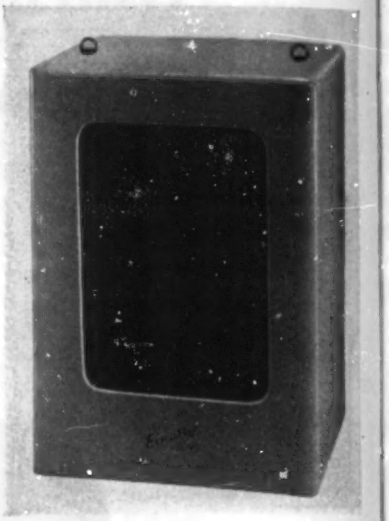
The design calls for stainless steel for all working surfaces, cabinet shelves, the interior of the refrigerator, etc., and cork plastic flooring.

FIBERGLAS DRAPERIES

Wider use of incombustible fiberglas fabrics in places of public assembly can be expected because of the development of new processes for dyeing and printing the fabrics, Leon Chastel, manager of Thortel Fireproof Fabrics, New York, told the Institute on Textiles and Clothing held at Michigan State College last month.

Fiberglas fabrics, Mr. Chastel pointed out, were produced as long ago as 1936 and are widely used for industrial and war purposes. But because no means was found to make dyes adhere to the glass, their use for decoration has always appeared to be limited. Color could be added to the molten glass batch, but satisfactory effects could be produced only in pastel shades.

"Within the past year," Mr. Chastel said, "this obstacle to the wide use of fire-safe Fiberglas decorative fabrics has been removed. It is now possible to dye the fabrics in many brilliant solid colors and shades. Stripes, figures, and prints have been developed in a variety sufficient to meet all decorative needs."



Duo-directional sound reproducer, especially designed for plant broadcasts

SOUND REPRODUCER

A new model HI-8 duo-directional baffle reproducer, especially engineered for clear tone reproduction over a broad sound range, is recommended by the manufacturers for plant broadcasts or planned music and employee-interest programs. It can be used in conjunction with Executone's music and voice-paging systems.

An 8-in. permanent magnetic speaker having a 6 ohm voice coil is enclosed in the baffle. Openings front and back, protected by coverings of rigid mesh, provide duo-directional transmission. The transformer is easily accessible for adjustment of its variable taps through a removable set-in cover. Two suspension rings are fastened on top of the unit to facilitate hanging. Covered with battleship gray simulated leather, the baffle measures 17 by 10½ by 23 in. Executone, Inc., 415 Lexington Ave., New York 17.

TRACING VELLUM

Automatic shading features are included in the new *Doubletone Tracing Vellum* just announced.

Cross-hatch shading is obtained on the new tracing vellum by applying a bush dipped in the special fluid provided with it. A second tone (lighter) which consists of a series of diagonal

(Continued on page 136)

"The Office of Housing Research"

◆ There are many "offices of housing research" today, many in government agencies (FHA, FPHA, WPB, HOLC, TVA, PBA, etc., etc.) all studying some phases of housing. The Department of Labor, too. And private agencies, manufacturers of building materials and equipment, prefabricators, university departments, the 20th Century Fund, CIO and AF of L, and to a large extent, perforce, every architectural office in the land. Knowledge of the results of the research of any one of them is not always available to the others. All are doing piecemeal work, with much duplication of effort, often at cross purposes.

◆ Senators Kilgore and Wagner believe "that national housing policy should concentrate upon the central objective of developing and creating conditions which will enable the industry to expand toward meeting the total housing needs of the Nation. . . ." They therefore introduced a bill, S 2046, the purpose of which is *"to provide means and facilities to coordinate, sponsor, make, or undertake technical research and studies, and related economic and industrial studies, which will assist and encourage the production of better housing and more desirable neighborhood and community development at progressively lower costs and at the same time create new opportunities for the employment of labor and capital through the expansion of industry."* It studies would include *"experimental production and testing through the pilot-plant"* etc. . . . all to be within NHA.

◆ Further, the Bill would charge the National Housing Administrator to *"prepare coordinated programs of technical research and studies for the development of standards, materials, equipment, methods of construction or fabrication, plans, designs, or other means of assisting and encouraging the production of better housing at lower costs; . . ."* and to *"coordinate and publish, in such form as may be most useful to the public and to the building industry, the results of all such technical research and studies . . ."* and to *"insure that all improvements . . . and all reductions in cost made possible by technical research and studies . . ., are passed on immediately to the consumer."*

◆ Some factors will see in this bill a possible government usurpation of their prerogatives. On the other hand, some will see opportunities otherwise denied since the administrator can, under the Bill's provisions, *"employ or utilize, by contract or otherwise, the services or facilities of private organizations or persons for technical and other services determined necessary . . ."* and can *"acquire such real property . . . and construct or acquire such equipment, laboratories . . . as may be necessary or desirable . . ."*

◆ There should be wide approval of the Bill's purposes. These objectives will be hailed by both the public and the building industry. The question of how successful its program can be, and how tangible its results, is one of its policy and administration. The question is one of the Office's understanding, judgment, integrity, fearlessness and willingness to enlist the cooperation of all factors in the building industry to the common end. Before it can become an Act the broad terms of the Bill may need interpretation in terms of intent to employ to the full the resources of the industry, both brains and materials, on a collaborative rather than a competitive basis.

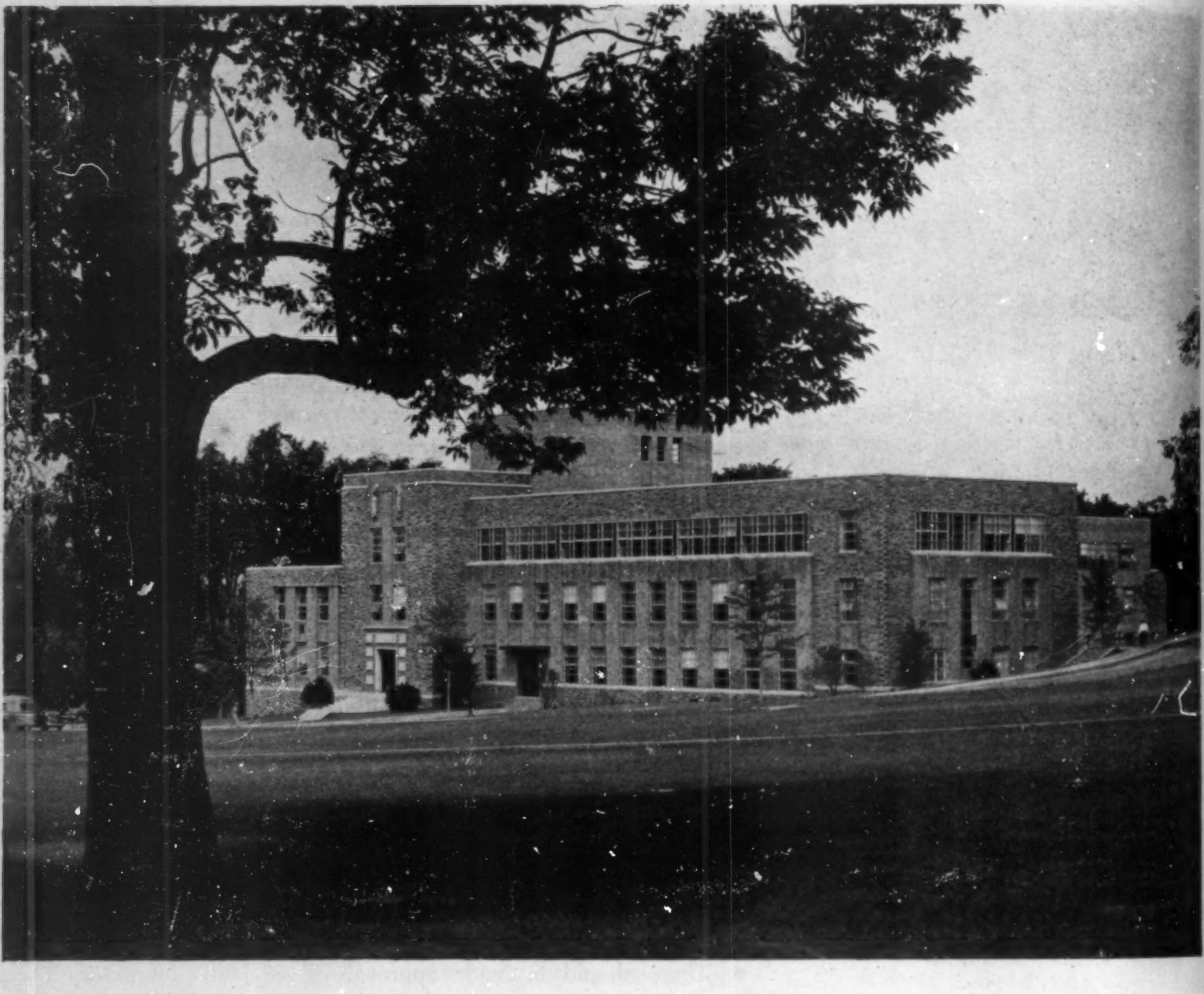
Kenneth K Stowell

EDITOR

OLIN HALL
OF CHEMICAL ENGINEERING
CORNELL UNIVERSITY, *Ithaca, New York*

Shreve, Lamb and Harmon, Architects

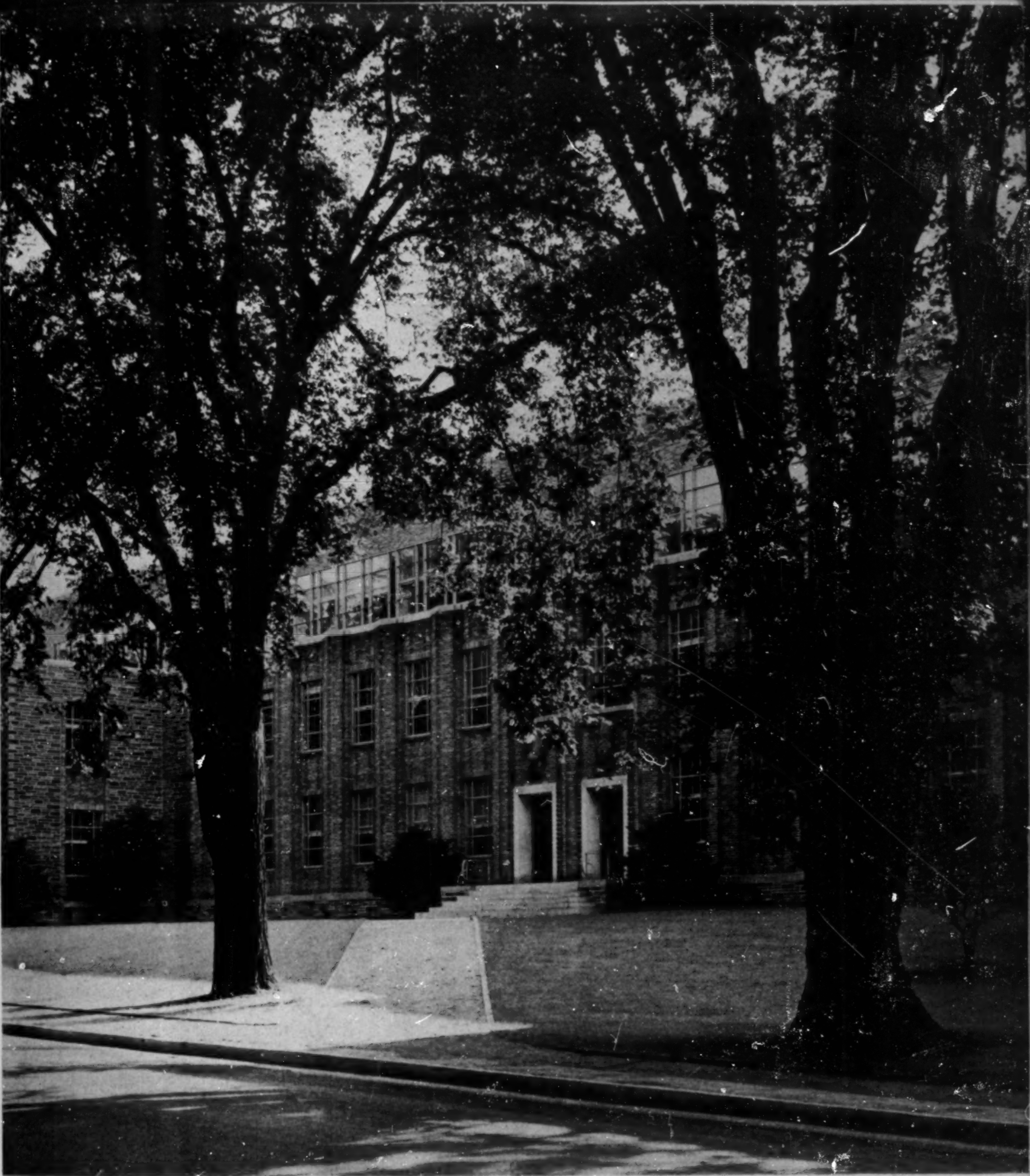
John Lowry, Inc., Builder



The south wing, with smaller laboratories fronting the three-story Unit Operations Laboratory

MODERN chemical engineering is romantic as well as realistic. It is an alchemy of science and imagination, of investigation and intuition, of matter and mind, of analysis and synthesis. It is a field of high adventure. To provide facilities for training students "not only to accumulate a certain measure of professional knowledge but to develop initiative of thought and the ability to cooperate effectively . . . ," Cornell has built this new laboratory, the gift of Franklin W. Olin. It is designed to provide both teaching and research facilities for some four hundred and fifty undergraduates and a proportionate number of graduate students.

The authorities required primarily a building adapted to their present progressive educational program, and flexible enough for future mutations and expansion. They desired also a building that would be compatible in form and materials with its neighbors on the hill. Brick and ledge stone give it color and texture in harmony with



Fenner Studio

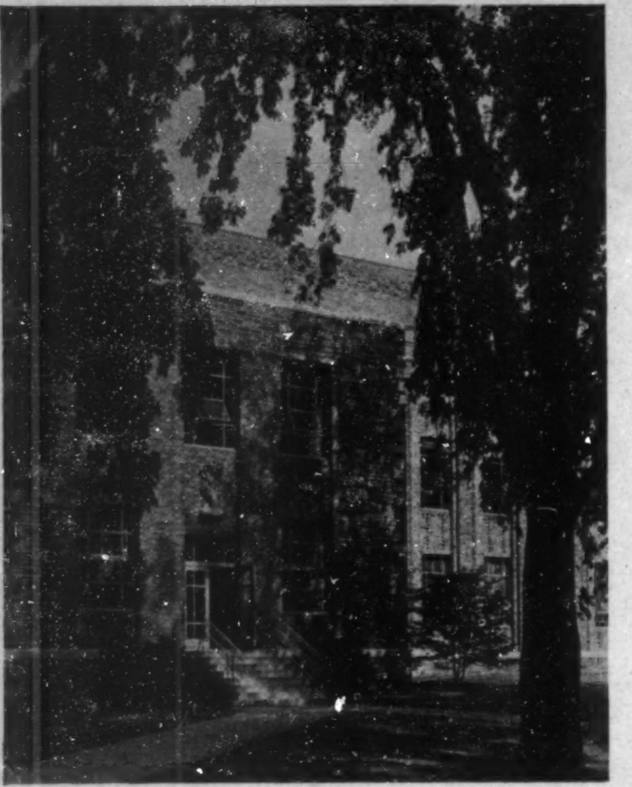
Main wing on east side of Central Avenue

nearby university buildings, and sculptured symbols of chemical engineering and industry give accents at the entrances.

The building has an unusually large number of well-equipped laboratories designed for the use of individual graduate students or groups of two or three undergraduates. The rooms used by the largest number of students are placed nearest the entrances to avoid congestion and minimize traffic.

The large lecture rooms are without windows and an adequate, uniform level of illumination is assured throughout the room at all times. Thermostatically controlled unit ventilators provide uniform temperature.

Structurally, the building is a steel frame, with reinforced concrete (T beam) floors. The floor construction is exposed generally to form the ceilings. However, there are suspended ceilings where necessary, in offices, large lecture rooms, etc., and removable, plain metal



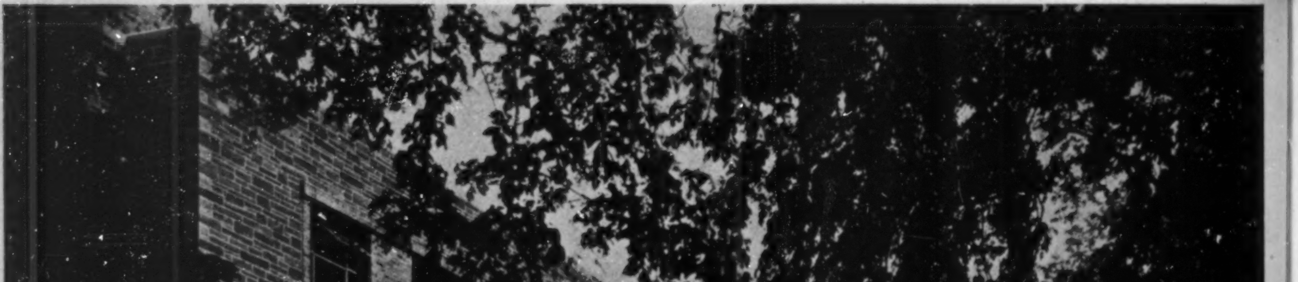
pans in corridors. Acoustical tile is used on portions of the lecture room ceilings and walls.

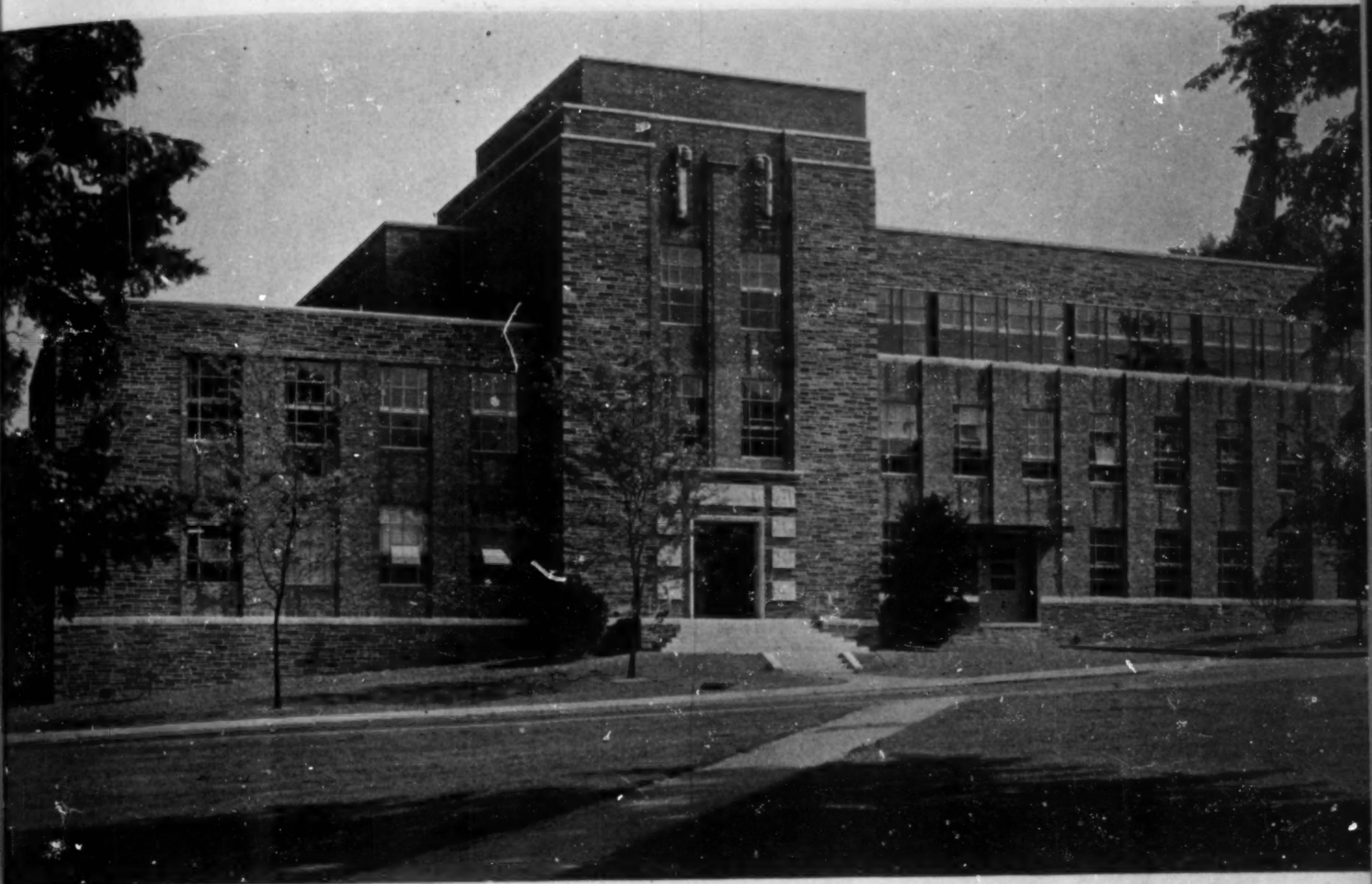
Interior partitions are constructed of concrete blocks generally unplastered but sprayed with two coats of flat wall paint. This is found acoustically desirable as well as economical. The windows are equipped with steel sash and frames, with projected opening sections.

A two-pipe steam heating system, with exposed radiators and manual control, is used in general except in classrooms and small lecture rooms where unit ventilators are thermostatically controlled. Unit heaters in large lecture rooms are used in addition to tempered, mechanical, fresh-air supply and exhaust. The large Unit Operations Laboratory is provided with ceiling type unit heaters.

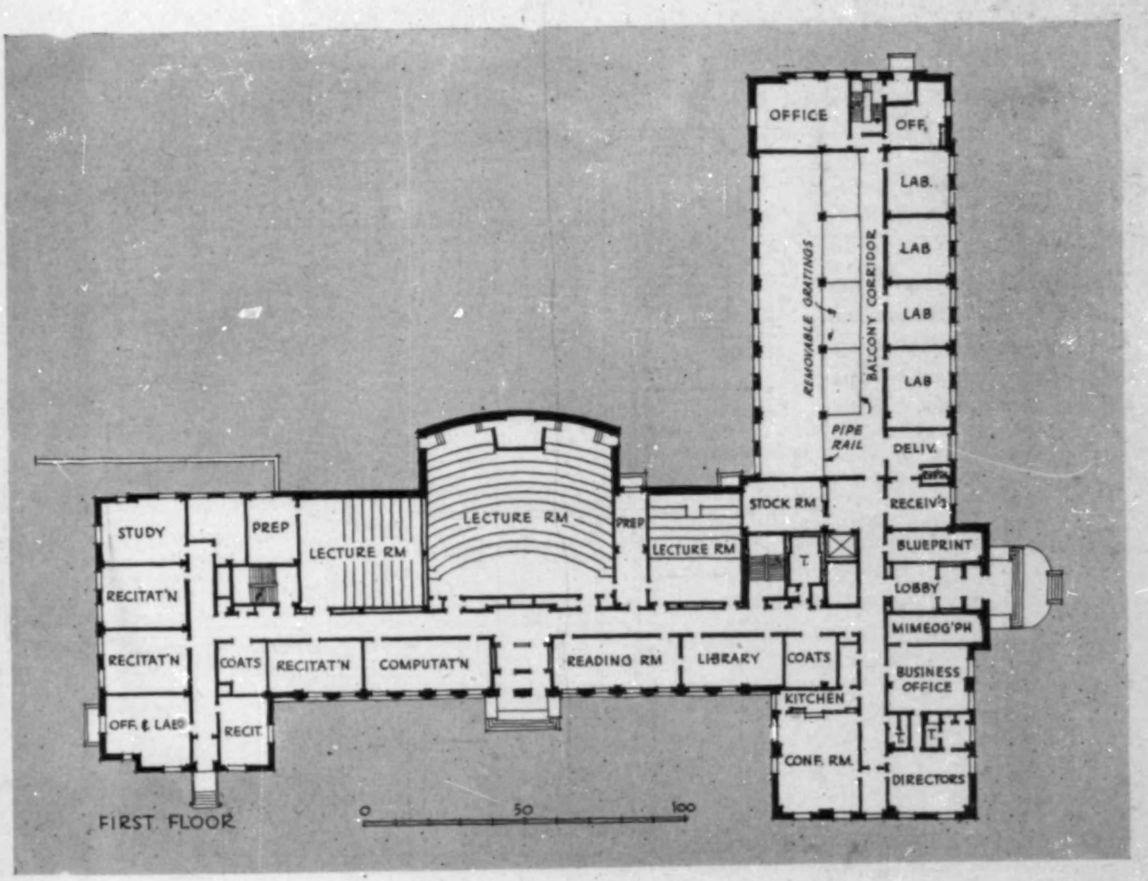
Laboratories naturally require an unusual amount of piped services; hot and cold water, steam, gas, air, vacuum, and both AC and DC electric current. Cold water and hot water are supplied through copper

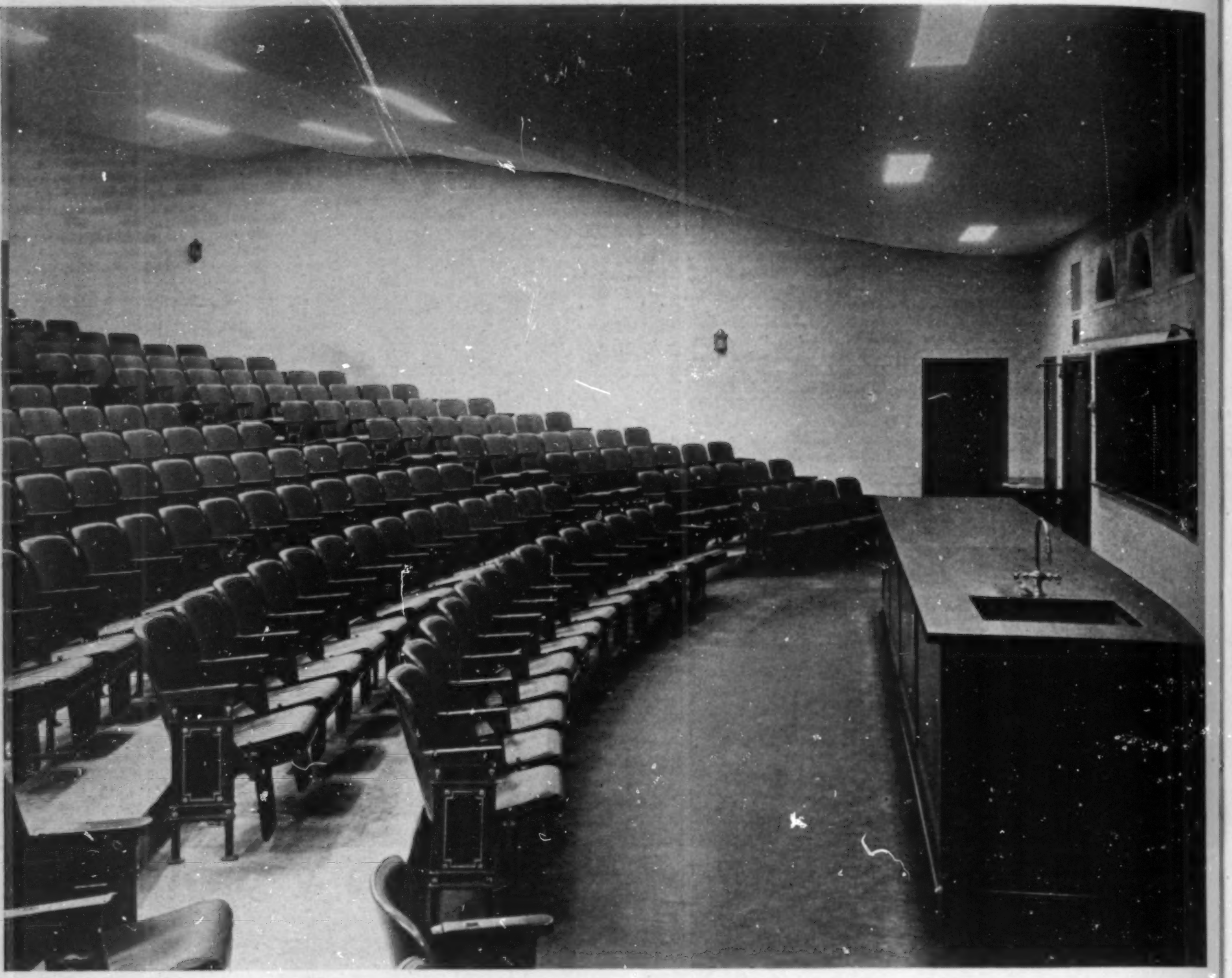
Two views of the main wing, looking southeast. The entrance in the foreground will serve a future wing, balancing the present south wing



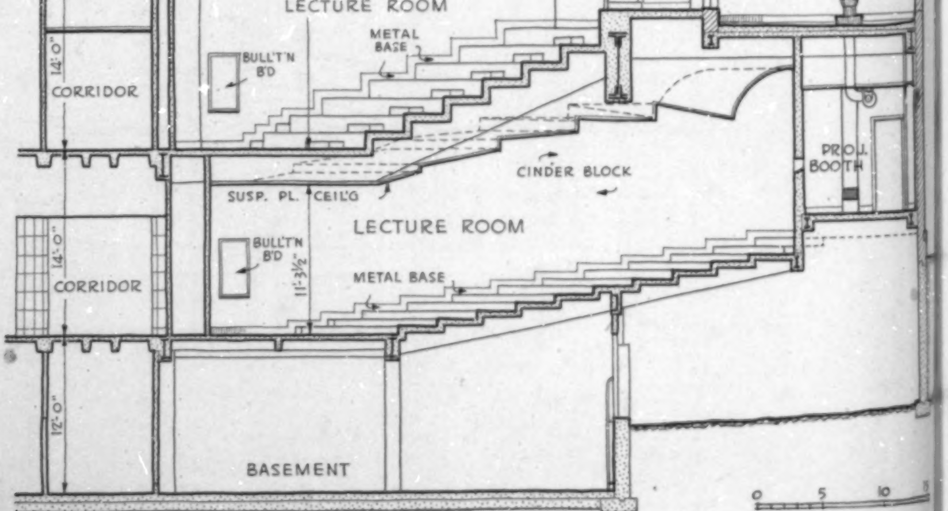


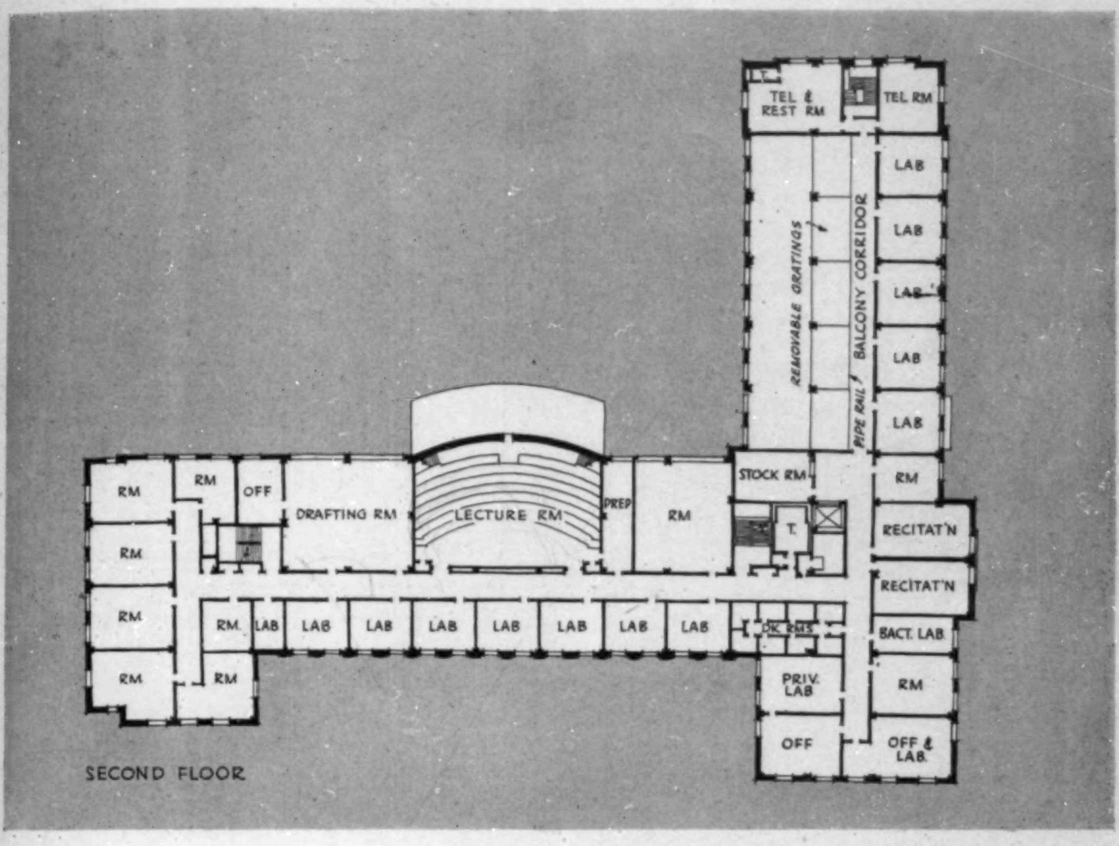
The southern entrance gives access to both main and southern wings


OFFICE
OFF.
LAB.
LAB
LAB
LAB
REMOVABLE GRATINGS
BALCONY CORRIDOR
PIPE RAIL
DELIV.
STOCK RM
RECEIV'G
BLUEPRINT
LOBBY
MIMEOG'PH
BUSINESS OFFICE
DIRECTORS
CONF. RM.
KITCHEN
COATS
LIBRARY
READING RM
COMPUTAT'N
RECITAT'N
COATS
RECIT.
OFF. & LAB'Y
RECITAT'N
RECITAT'N
STUDY
PREP
LECTURE RM
LECTURE RM
PREP
LECTURE RM
T.
T.
T.
FIRST FLOOR
0
50
100

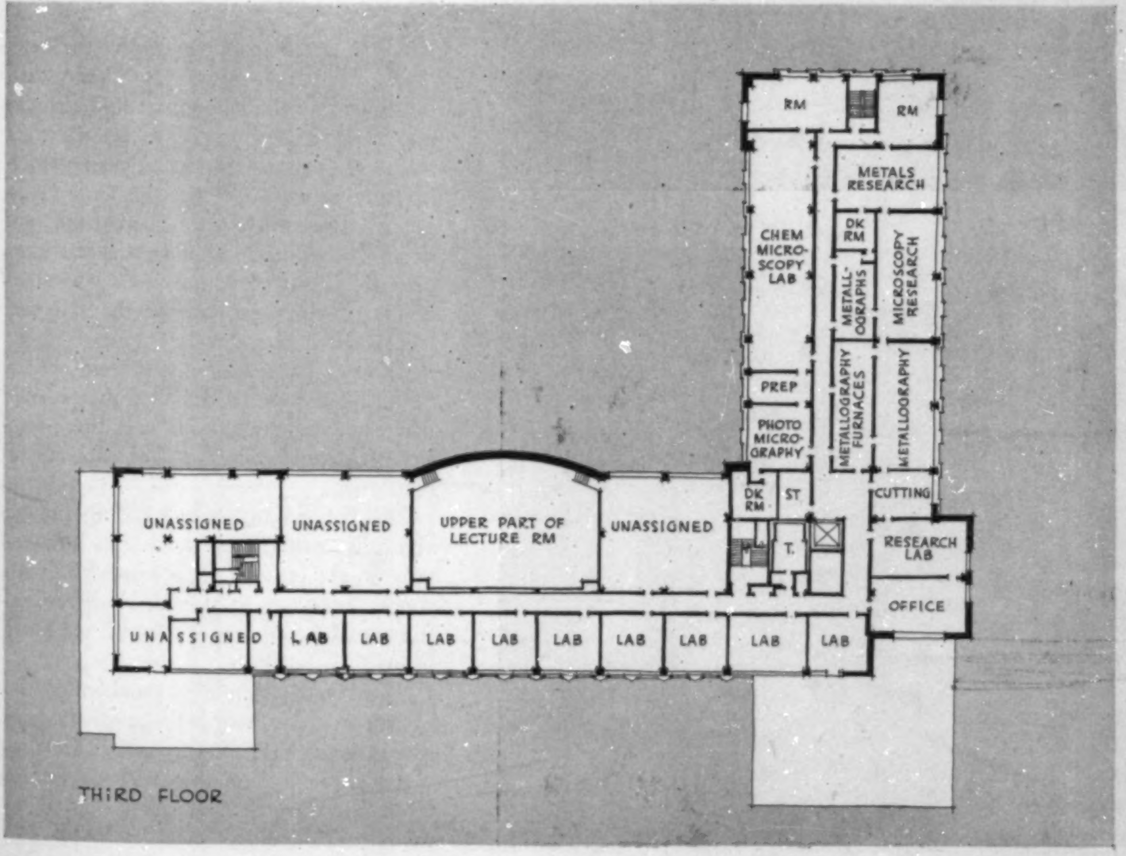


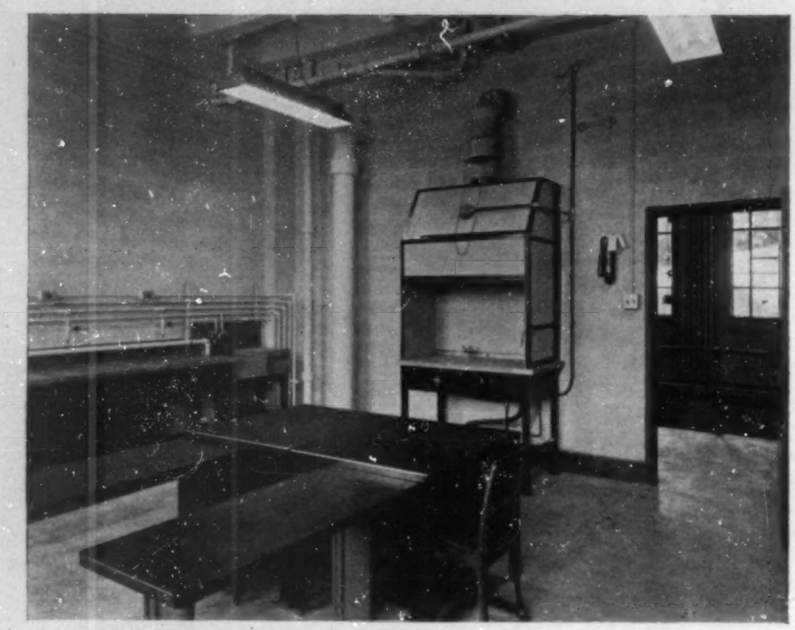
The largest lecture room, windowless, seats 338 students. Right. Section through the centrally located lecture rooms showing construction scheme

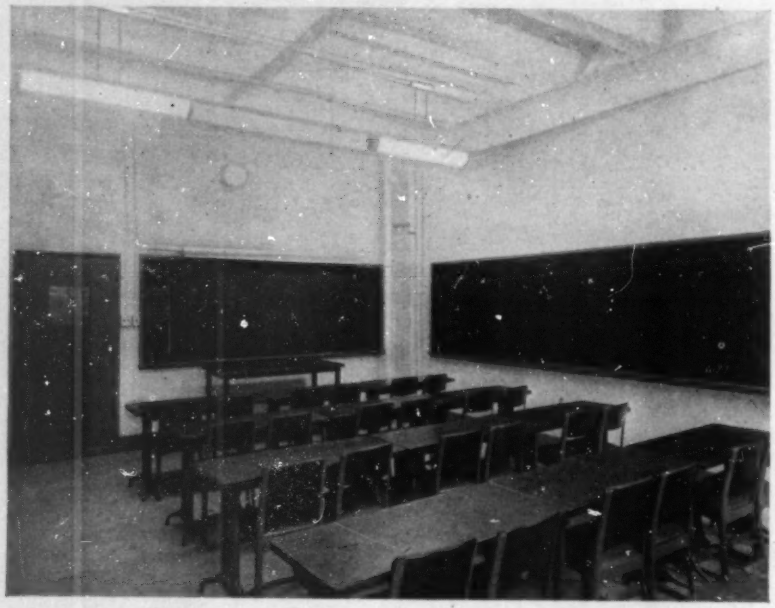

EXHAUST DUCT
SUSPENDED PLASTER CEILING
14'-0"
CORRIDOR
21'-2½"
CINDER BLOCK
LECTURE ROOM
METAL BASE
BULL'T'N B'D
14'-0"
CORRIDOR
CINDER BLOCK
PROJ. BOOTH
SUSP. PL. CEIL'G
LECTURE ROOM
BULL'T'N B'D
11'-3½"
METAL BASE
14'-0"
CORRIDOR
12'-0"
BASEMENT
0
5
10

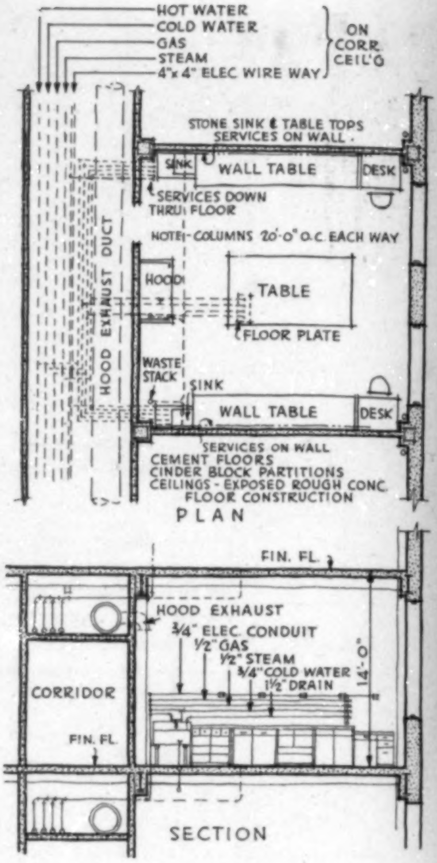

TEL & REST RM
TEL RM
LAB
LAB
LAB
LAB
LAB
REMOVABLE GRATINGS
BALCONY CORRIDOR
PIPE RAIL
STOCK RM
RM
RECITAT'N
RECITAT'N
BACT. LAB
RM
OFF & LAB.
OFF
PRIV. LAB
DK RMS
T.
RM
RM
OFF
DRAFTING RM
LECTURE RM
PREP
RM
RM
RM
RM
RM.
LAB
LAB
LAB
LAB
LAB
LAB
LAB
LAB
RM
SECOND FLOOR

The three-story Unit Operations Laboratory in the south wing is flanked with smaller laboratories on the second floor. The third floor provides specialized laboratories


RM
RM
METALS RESEARCH
DK RM
CHEM MICRO-SCOPY LAB
METALL-OGRAPHS
MICROSCOPY RESEARCH
METALLOGRAPHY FURNACES
METALLOGRAPHY
PREP
PHOTO MICRO-GRAPHY
DK RM
ST
CUTTING
RESEARCH LAB
T.
OFFICE
UNASSIGNED
UNASSIGNED
UPPER PART OF LECTURE RM
UNASSIGNED
UNASSIGNED
LAB
LAB
LAB
LAB
LAB
LAB
LAB
LAB
LAB
THIRD FLOOR






HOT WATER
COLD WATER
GAS
STEAM
4"x 4" ELEC WIRE WAY
ON CORR. CEIL'G
STONE SINK & TABLE TOPS SERVICES ON WALL.
SINK
WALL TABLE
DESK
SERVICES DOWN THRU FLOOR
NOTE - COLUMNS 20'-0" O.C. EACH WAY
HOOD EXHAUST DUCT
HOOD
TABLE
FLOOR PLATE
WASTE STACK
SINK
WALL TABLE
DESK
SERVICES ON WALL
CEMENT FLOORS
CINDER BLOCK PARTITIONS
CEILINGS - EXPOSED ROUGH CONC. FLOOR CONSTRUCTION
PLAN
FIN. FL.
HOOD EXHAUST
3/4" ELEC. CONDUIT
1/2" GAS
1/2" STEAM
3/4" COLD WATER
1 1/2" DRAIN
14'-0"
CORRIDOR
FIN. FL.
SECTION

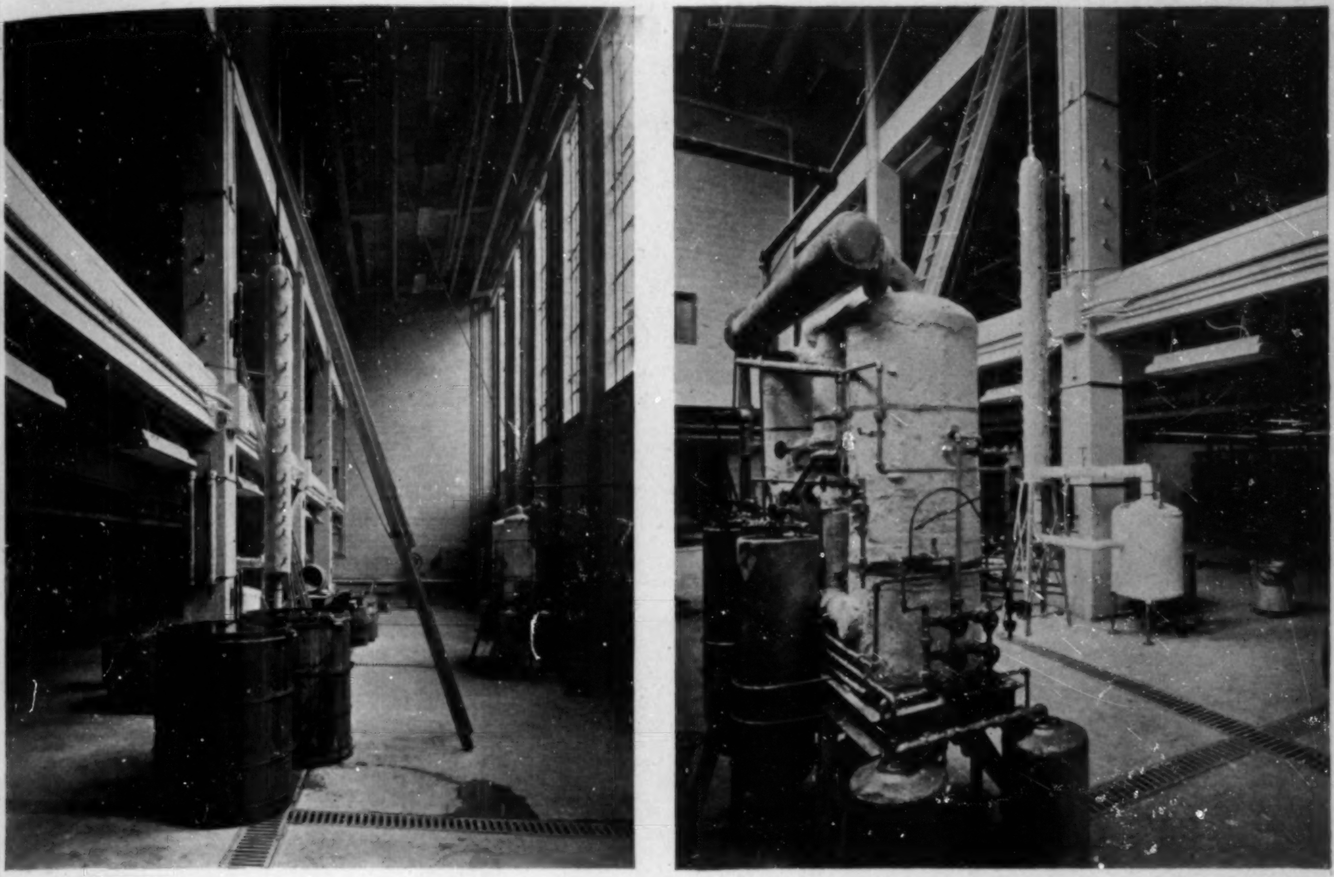
Top: One of unit laboratories used by advanced students. Center: Typical recitation room. Bottom: The main corridor near the west entrance. Diagram: Plan and elevation of a unit laboratory with its various services

tubing, water coming from the city mains. The drains are of extra heavy cast-iron pipe and the laboratory drains empty into catch basins or pits before running to the public storm sewer. Constant high pressure steam outlets in the Unit Operations Laboratory are piped from gas steam boiler in an adjoining space. Low pressure steam (5 pounds) for laboratory use is provided in each of the standard laboratories.

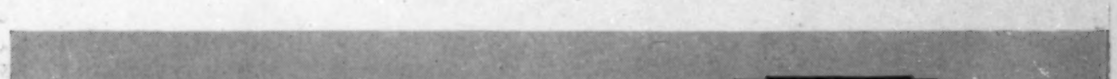
There is no central distribution system for distilled water because of the possible danger of contamination and the necessity of frequent cleanings of such a system.

The services in general are distributed vertically in two pipe shafts and horizontally on the ceilings of the corridors, with supply branches to standard laboratories from mains on the ceiling of the floor below.

Sprinkler protection is provided in the basement shops and storage rooms and carbon dioxide fire extinguishers are provided in each laboratory. There is also automatic carbon dioxide protection in the chemical storage room.



The three-story "Unit Operations Laboratory" (20' x 100' x 40') is adapted to the construction of pilot plants at a scale large enough to provide accurate estimates of the performance of full-size commercial plants


COMPR'S'R & VAC. PUMP
ANALYT. LAB
UNIT OPERATIONS LAB.
MACH. SHOP
METER RM
GAS FURNACE
GRIND'G RM
ELECTRO-CHEM. LAB
TRANSF. R
L'CK'RS
SW. BD.
BATTERY R.
T.
ST.
WOOD SHOP
APPARATUS
GENERAL SERVICE RM
CHEM. STOR
ACID STOR
BASEMENT

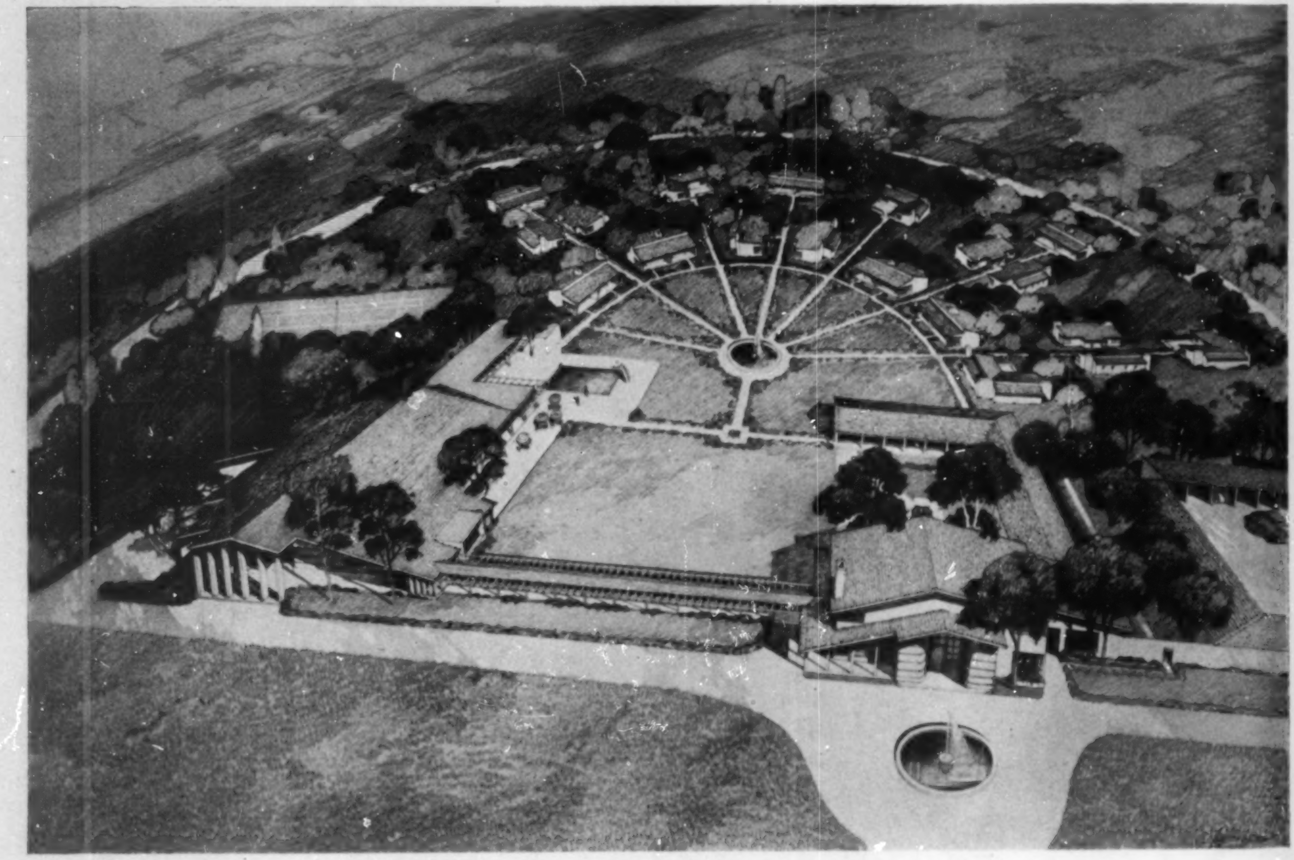
RESORT HOTEL FOR POSTWAR TRAVELERS

Proposed Hollywood Hotel, Las Vegas, Nevada

Walter Wurdeman and Welton Becket, Architects

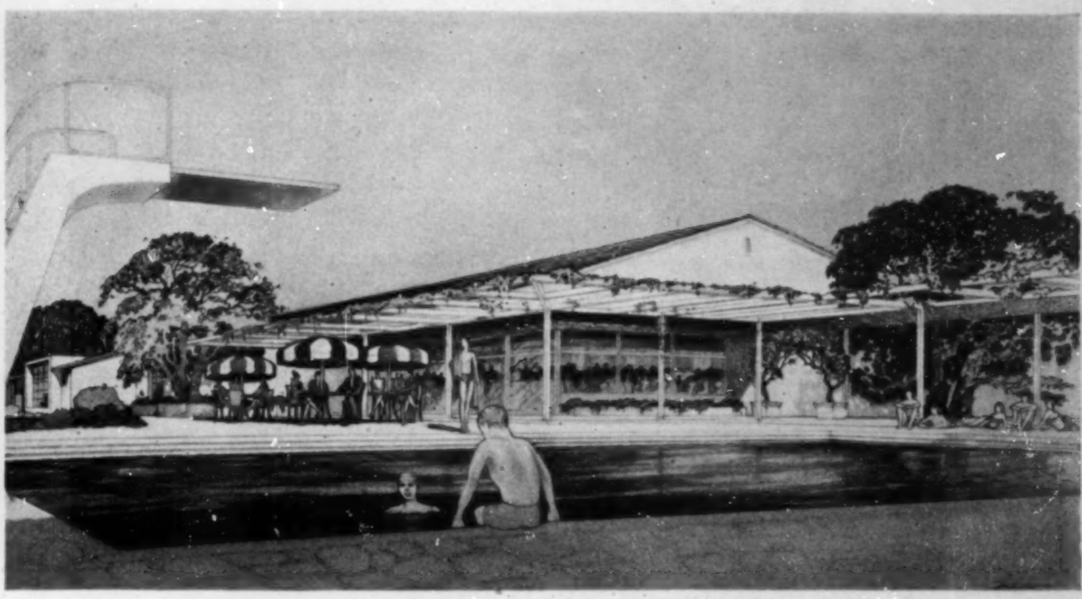
SINCE, presumably, the *raison d'etre* of a resort hotel is the maximum enjoyment of outdoor living, the architects have developed an open, flexible decentralized plan for the proposed development. Instead of the stereotyped formality of one large building, here are a number of attractive small bungalows so situated as to afford exceptional privacy and yet be readily accessible from all the hotel's facilities. The main building (with motor court adjacent) provides the offices, lounge, lobby, shops, and quiet bedrooms around a patio. Lounges, bar, dining, entertainment facilities, are in a separate but connecting building.

The site selected is two miles out of town, where ample ground is available for a private air and helicopter port, if air-minded prophecies materialize. The plot plan (opposite page) provides for easy expansion on the inner and outer rims of the semicircular road.

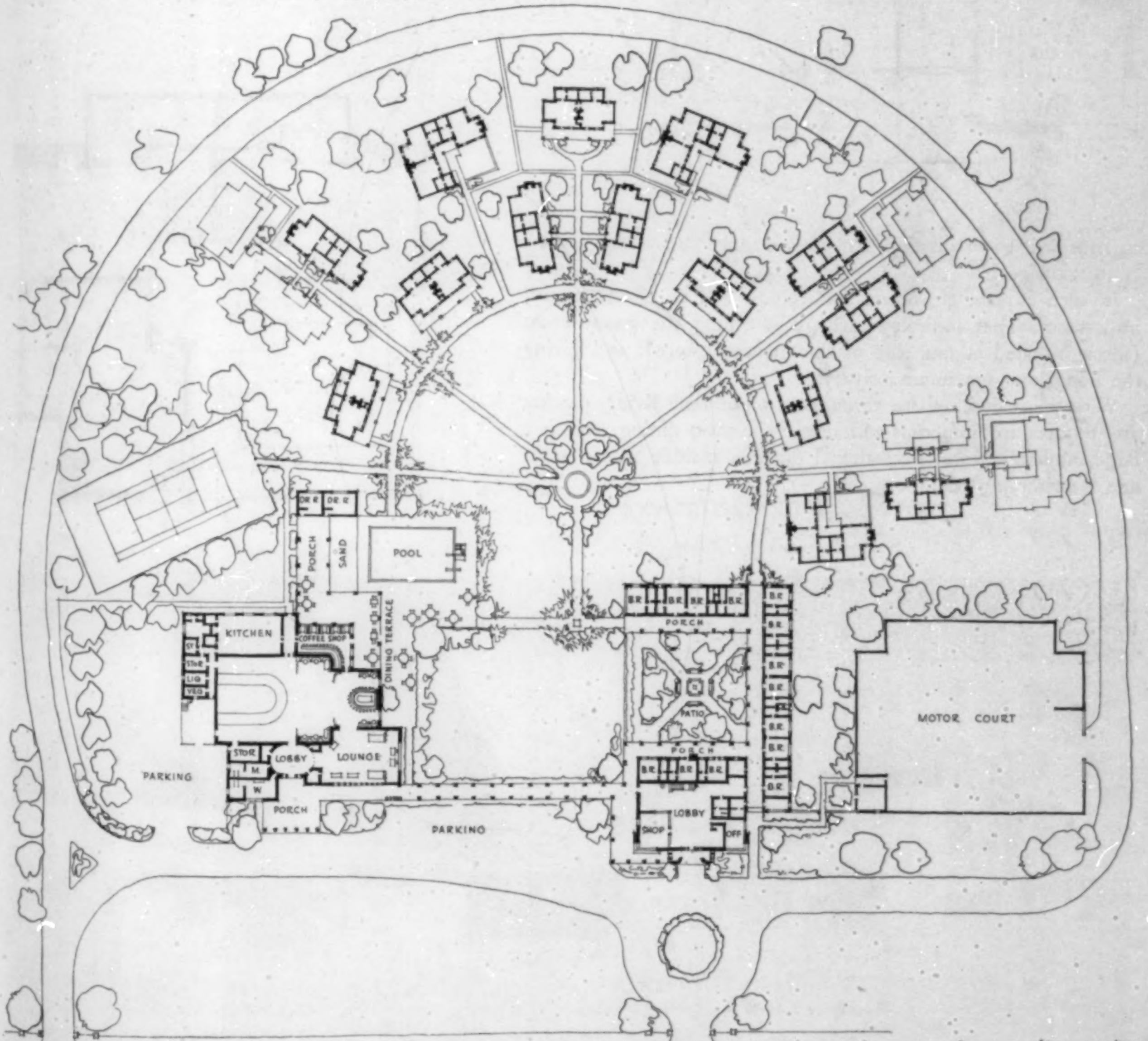


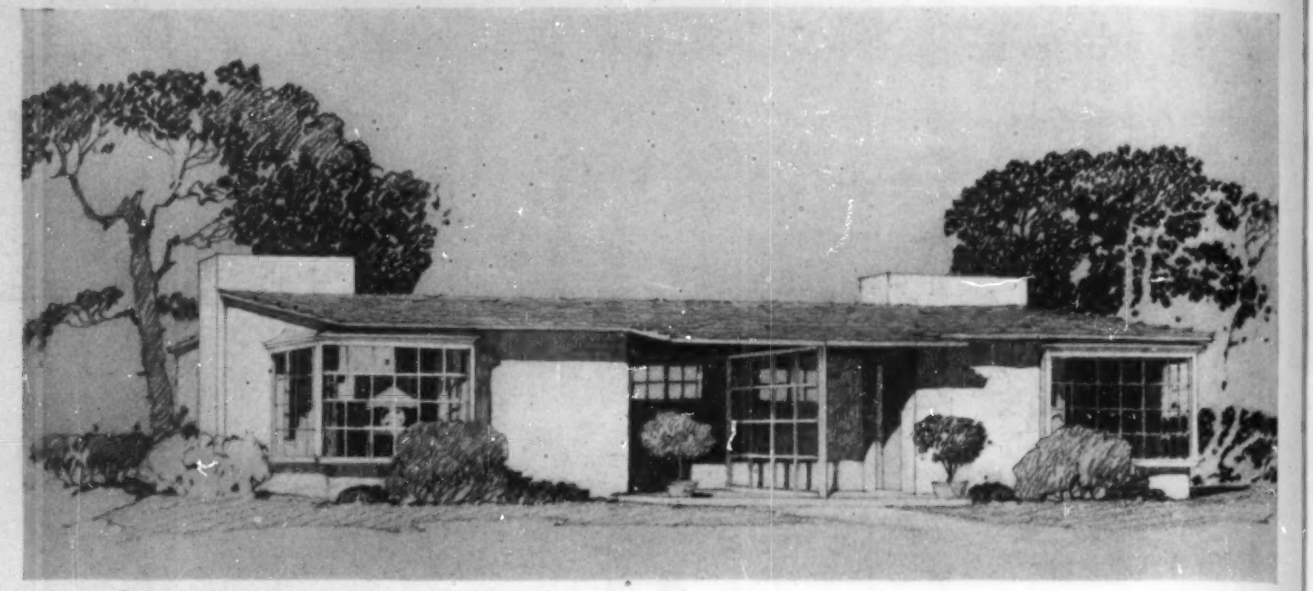
Plans throughout are on the luxurious side—television in every room, health lamps in baths and kitchen, electric speaker controls and quick freeze units are among the features. Air conditioning will be complete, with separate precipitron units for the individual houses and a central plant for the main buildings. Temperature and humidity will be regulated in direct relation to the exterior temperature rather than kept constant.

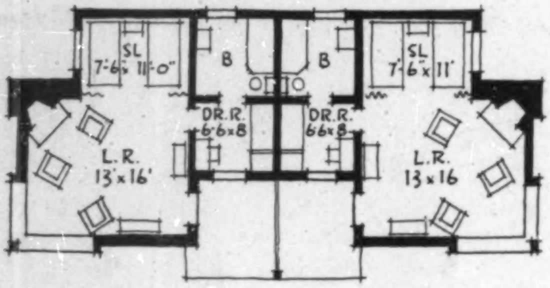
Construction will be of reinforced, insulated local doblar block. The architects are developing prefabricated bath and kitchen units. Like many postwar projects, the plans call for the use of new light metals, heat resisting and structural glass, solar heat. Plastics will be widely used throughout the hotel: in shower doors with curved, decorated, revolving surfaces; in sink tops and splash; in plumbing fixtures and fittings; in soundproof sliding doors; in light fixtures and in washable, stainproof paints. Screens, upholstery and



Continental fashion, the dining terrace abuts the swimming pool. Plot plan is spacious and expansible


DR
DR
PORCH
SAND
POOL
KITCHEN
COFFEE SHOP
DINING TERRACE
ST
STOR
LIQ
VEG
STOR
LOBBY
LOUNGE
M
W
PORCH
PARKING
PARKING
BR
PORCH
PATIO
PORCH
LOBBY
SHOP
OFF
MOTOR COURT
0
50
100



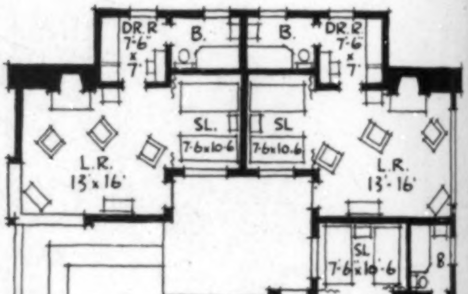

SL
7'-6" x 11'-0"
B
B
SL
7'-6" x 11'
DR.R.
6-6x8
DR.R.
6-6x8
L.R.
13'x16'
L.R.
13 x 16

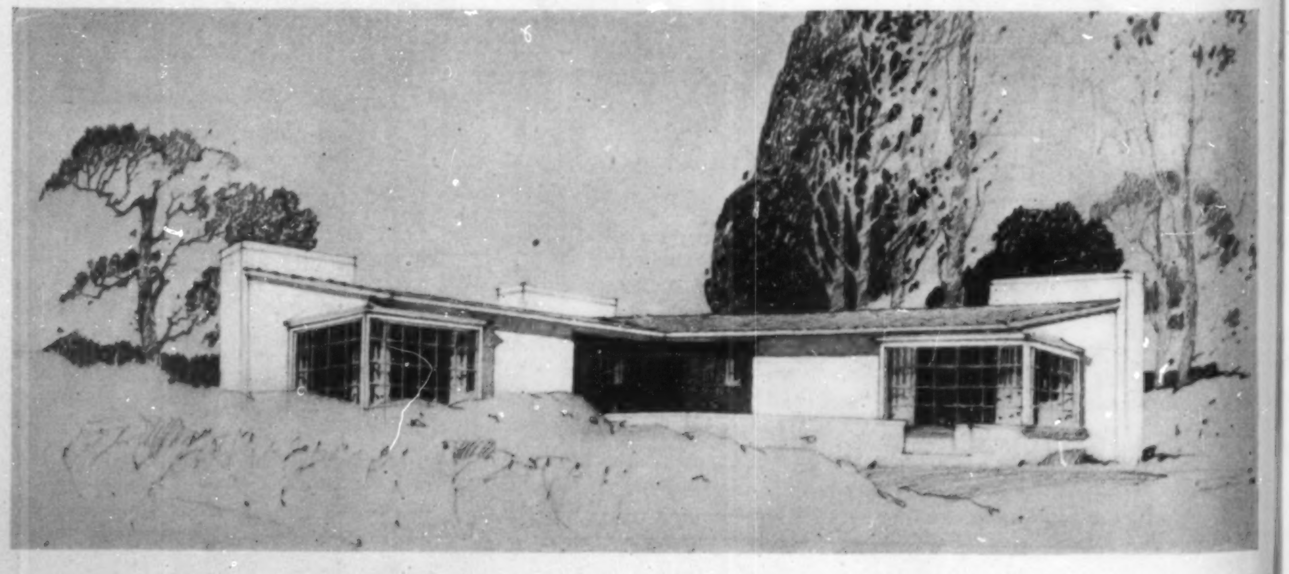
For individuality, bungalows are of several styles. Each comprises two or three separate suites of living room, dinette, bedroom and bath. Entrance porches are divided

curtains will be of plastics, and the furniture and dishes will be "unbreakable."

In such a plan, of course, landscaping will be of the utmost importance. That indicated includes screening the motor court (nicely situated at one side of the main entrance), and giving the bungalows maximum privacy.

With the main emphasis throughout on outdoor living, porches and terraces are numerous and ample; the main dining room is a large outdoor terrace. Recreational facilities include tennis courts and a swimming pool.


DR.R
7'-6"
x
7'
B.
B.
DR.R
7'-6
x
7'
SL.
7-6x10-6
SL
7-6x10-6
L.R.
13'x16'
L.R.
13'-16'
SL
7-6x10-6
B
PATIO
L.R.
13'-16'



THE GENERAL HOSPITAL

Architectural Record's Building Types Study Number 92

Prepared in Collaboration with MODERN HOSPITALS

ARTICLES

HEALTH SERVICES AND CITY PLANNING
By Edwin A. Salmon

CORRELATING THE PUBLIC HEALTH CENTER WITH THE COMMUNITY GENERAL HOSPITAL
By Joseph W. Mountin

THE HOSPITAL BUILDING PROGRAM
By C. W. Munger, M.D.

HOSPITAL MATERIALS AND EQUIPMENT
By Alexander Robinson

REFRIGERATION AND AIR CONDITIONING
By Terry Mitchell, M.E.

HOSPITAL FOOD SERVICE *By Harry Blumberg*

HOSPITAL KITCHENS, *Time-Saver Standards*

PROJECTS

PROJECT "X" *Schmidt, Garden and Erikson, Architects*

WESLEY MEMORIAL HOSPITAL
Thielbar and Fugard, Architects

NORFOLK COUNTY HOSPITAL
James R. Edmunds, Jr., Architect

VALLEJO COMMUNITY HOSPITAL
Douglas Dacre Stone and Lou B. Mulloy, Architects

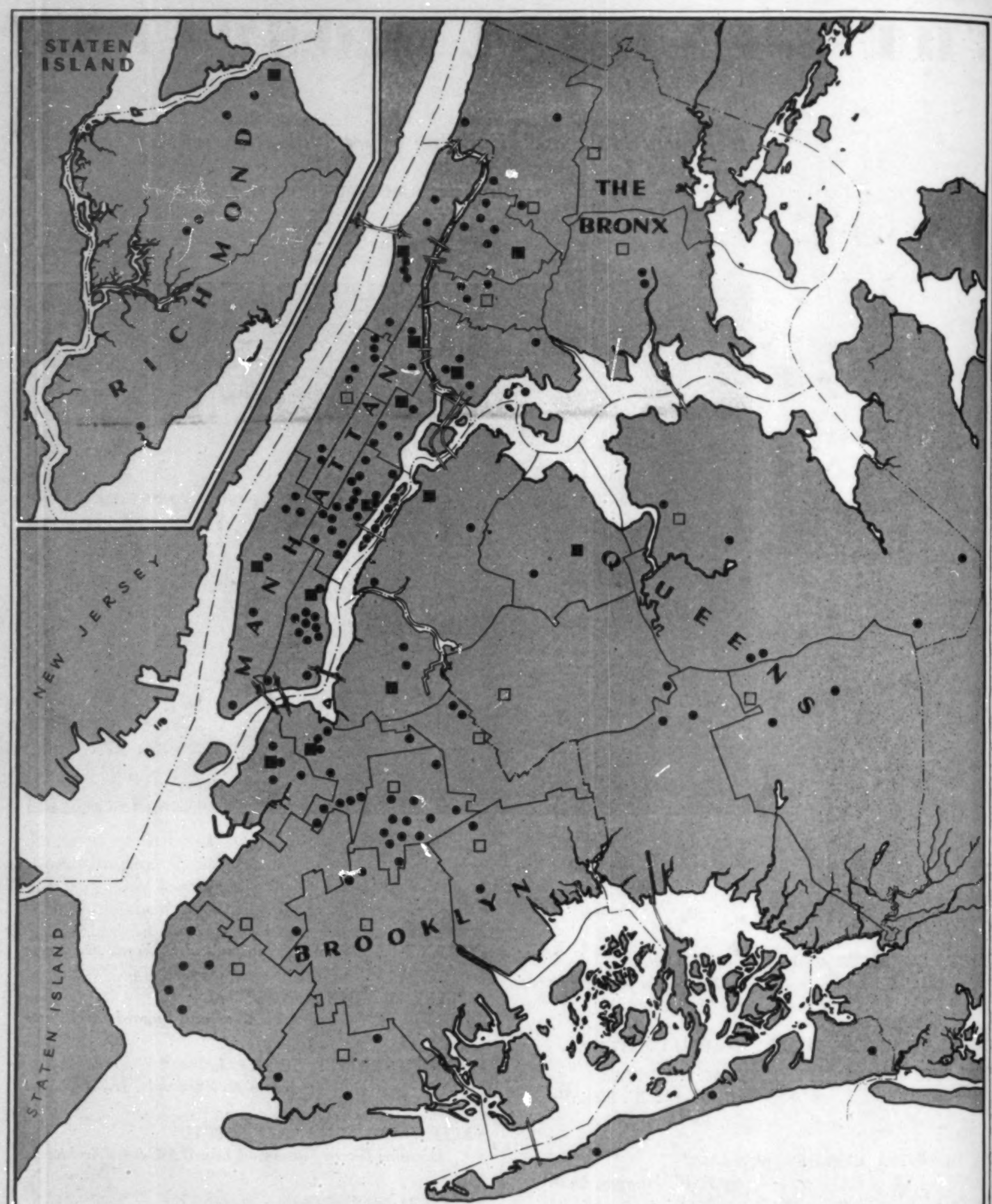
ARLINGTON HOSPITAL
Buckler and Fenhagen, Architects

PRINCE GEORGES COUNTY HOSPITAL
Kea, Ross and Walter, Architects

ST. MONICA'S HOSPITAL AND HEALTH CENTER
Lescher and Mahoney, Architects

PITTSBURG COMMUNITY HOSPITAL
Douglas Dacre Stone and Lou B. Mulloy, Architects

PROJECT "Z" *Schmidt, Garden and Erikson, Architects*


STATEN ISLAND
RICHMOND
THE BRONX
MANHATTAN
QUEENS
BROOKLYN
NEW JERSEY
STATEN ISLAND
■ EXISTING HEALTH CENTER
□ PROPOSED HEALTH CENTER
● HOSPITAL
HEALTH DISTRICT
CITY BOUNDARY LINE
BOROUGH BOUNDARY LINE

Correlation of all health services with known and anticipated needs is essential in the development of a master plan. The composite map shows existing health centers, proposed health centers, hospitals and established health center districts. The map above combines hospital locations from a map of the Hospital Council of Greater New York, with health center locations from a map of the Health Department Building Program

HEALTH SERVICES AND CITY PLANNING

By Edwin A. Salmon
Chairman, City Planning Commission
Chairman, Hospital Council of Greater New York

Long-range, visionary planning, based on drastic revolutionary changes in our social and economic systems may make for interesting discussions and advancement of idealistic theories, but will not produce jobs nor provide necessary public improvements. Realistic though limited objectives which are understandable to all and which will provide for the continuation and expansion of our present systems in meeting the real needs of the communities are what our fighting men and women expect of us in postwar planning, so that they may return to the homes they left in a recognizable America and put their shoulders to the wheel.

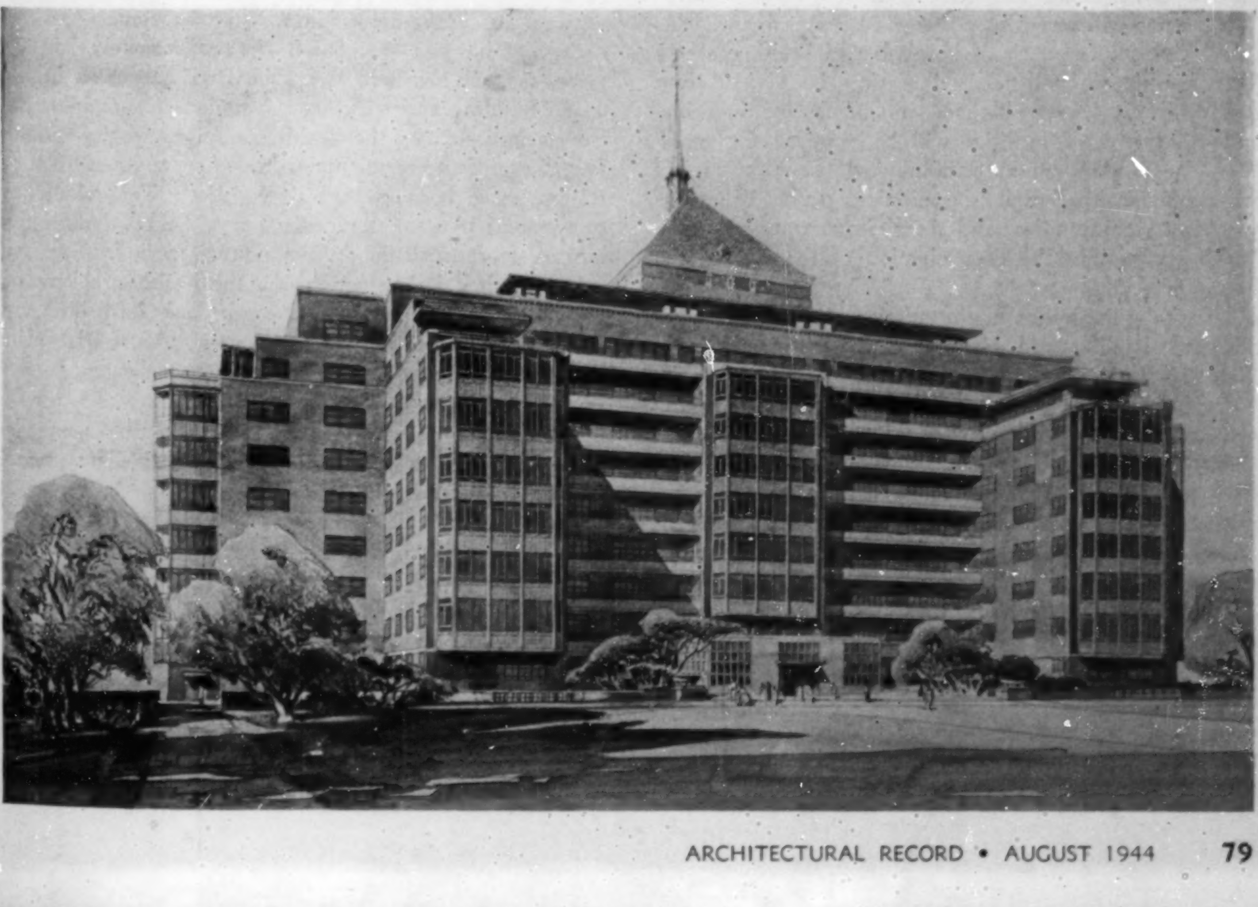
So much is required to meet our present inadequacies and deficiencies in all types of service facilities and so many projects can be determined without lengthy surveys and investigations that it is possible to develop now a substantial backlog of plans based on these obvious needs.

Two most important factors which should be kept constantly in mind in our present planning are: *first,* the necessity for developing plans now for specific hospital projects of all categories from small modernization plans to large comprehensive centers which are urgently required to overcome increasing obsolescence in the older institutions and the needs for added services; and *second,* the importance of having available complete plans and specifications for worthwhile projects to provide immediate employment for demobilized servicemen and women and war workers where and when required after the war.

It is unlikely that uniform criteria or standard techniques can be determined to suit hospital planning for all communities and it is further unlikely that any standards would remain static for any length of time, but it is certain that the best can be developed only through the proper coordination of all planning activities. City planners, architects and engineers, physicians and hospital administrators, business and financial leaders must combine their efforts towards the common goal of sane, logical, over-all planning for the general welfare. The coordinated efforts of both government and private enterprise are absolutely essential to the ultimate success of the implementation of the complete master plan.

The master plan is essential to the intelligent and proper determination of all types of service plans based on an equitable distribution of hospital and health facilities and the possible development of hospital areas or districts similar to other administrative district systems.

One of New York's postwar projects, Kings County Hospital, Tuberculosis and Chronic Disease Pavilion



It is, of course, important to maintain in this voluntary system a freedom of choice on the part of both patient and physician where the patient is able to pay full costs. And it is likewise important that all hospitals and health facilities included in pre-payment plans of whatever type render full and competent services which will meet minimum standards.

A master plan for hospitals and related facilities should show all existing hospitals and institutions for the care of the sick, which shall have been determined to be satisfactorily located and which provide adequate facilities and distribution of clinical services for the communities to be served. It should show, also, those existing hospitals and institutions which are satisfactorily located but require certain modifications and additions, and all proposed new facilities which shall be deemed to be desirable and which, in addition to existing institutions, shall make adequate provisions for a comprehensive plan of hospitals. Such a plan should indicate the recommended locations together with sufficient detail of each facility to provide a complete understanding of the services to be established. This plan must also be sufficiently flexible to lend itself to modification in structure or program from time to time to meet changing conditions and advancement in health and hospital procedures.

There are several important and specific questions in the hospital field which must be resolved prior to the determination of the proper allocation of services on a community-wide basis. Some of these problems are: How can we stabilize our communities in order to plan with assurance and offer reasonable opportunities for work, play, travel and minimum standard living conditions? What effect will greatly increased air travel have on decentralization of industry and population? Will air travel have a reverse effect upon hospitals, making the city medical center more accessible to outlying communities? What effect will recent trends toward pre-payment plans have upon a greater use of hospitals and health centers? To what degree will medical services be divided into specialties, the family physician and preventive medicine, and what type of facilities will be required for each? How far can we go in combining community services for public health, hospitals, sanitation, etc.? What are workable communities and how important are their health statistics in the determination of the size of the hospitals?

The real significance of the relationship between over-all city planning and planning for health services in New York City is indicated in the provisions of the New York City Charter, under which the Planning Commission functions, and the objectives of the Hospital Council of Greater New York, a voluntary agency. The Charter, among other important items, requires the Commission to prepare a master plan for the City of New York which shall show all types of public improvements, private utilities, sites for public buildings, building zone districts and all other "such features, changes and additions as will provide for the improvement of the city and its future growth and development and afford adequate facilities for the housing, transportation, distribution, comfort, convenience, ***health and welfare*** of its population." The constitution of the Hospital Council states among other objectives, that it shall "coordinate and improve the hospital and health services of New York City and plan the development of these services in relation to community needs."

The City Master Plan would be totally inadequate and incomplete without a plan for hospital and health facilities and the Hospital Council's work would be quite ineffective if not geared to the over-all city plan.

With this in mind the City Planning Commission requested the Hospital Council to undertake the study and preparation of a master plan for hospitals, to include municipal and voluntary institutions. The Commission has offered the full cooperation of the city agencies and full use of all available general planning data. The Council has received grants from voluntary fund-raising organizations to develop this project, which is now well under way.

The techniques for the development of such a plan for health services are not yet definite and the criteria for appraising the adequacy of existing facilities or establishing new ones must likewise be determined. Methods of approach to the development of formulae for this type of planning are being rapidly completed and the Hospital Council will publish a bulletin from time to time containing articles and planning data related to this problem.

Definite community planning factors which must be taken into consideration are: population distribution, trends of economic and social characteristics; property uses and land developments; transportation and arterial highways; other community services and proposed improvements including neighborhood developments and administrative district systems. In New York many of these features have been determined as integral parts of the total master plan and, as such, have a definite legal status and exert an effective control over future developments. An important phase of this plan is the establishment of a complete District Health Administration program whereby the city has been divided into 30 health center districts, each containing a population of approximately 250,000 persons. Each area will be provided with a district health center building and sufficient sub-stations to provide services as indicated by the health conditions of the various neighborhoods. Fifteen major health centers and 10 sub-stations have been erected since 1935. Ten additional centers and nine sub-stations are now being planned for immediate construction in the postwar period.

The statistical data concerning the health problems of each district compiled on a five-year basis have been extremely useful in the development of the district plan and will also provide a very important element in the determination of hospital requirements.

It is with considerable confidence in the generally accepted policies of over-all planning that we are undertaking the difficult and complicated task of preparing a master plan of this kind. We all have a very healthy respect for the magnitude of the problem and if this article appears to be on the side of over-simplification it is because of its brevity and not through ignorance of the facts. Many other aspects of general city planning related to neighborhood hospital planning could profitably be discussed here, but they would require considerable space for presentation. There are now competent authorities at work on these problems and many of the answers will be forthcoming shortly.

CORRELATING THE PUBLIC HEALTH CENTER WITH THE COMMUNITY GENERAL HOSPITAL

By Joseph Mountin, Medical Director
States Relations Division, United States Public Health Service

THE PAST FEW YEARS, especially since the onset of the second world war, have witnessed a rapid development of what might be termed "health consciousness" on the part of the American people. This public attitude towards health is now being volubly expressed in numerous ways; in a demand for more and better hospitals and health centers and for a better distribution of these facilities, for more doctors and more nurses in rural areas, in public health and in industry.

There is a growing realization, too, on the part of hospital administrators, boards of trustees and public health officials that their respective fields of responsibility have broadened and have, indeed, to some extent merged. This realization is reflected in the current interest in a close correlation of facilities for the administration and practice of public health with those of the hospital.

While the advantages to be gained by coordinated effort on the part of hospitals and public health programs have long been realized, the development of the practice outside of metropolitan areas represents a relatively new trend of thought which has been largely pioneered by the W. K. Kellogg Foundation,* and a number of counties in California.

Before any new development can be expected to gain public approval, its value and usefulness must be apparent. The values inherent in correlated hospital-health center activities may be considered both tangible and intangible. The intangible values relate directly to the public viewpoint in health matters. It is becoming increasingly difficult to distinguish a dividing line between the so-called preventive and curative aspects of health, even by those engaged in these respective activities. The differentiation for the most part eludes the public entirely. It is perfectly natural, therefore, that a community should look to one place in all matters pertaining to their individual and collective health.

In being closely associated with the hospital, public health activities gain stature and dignity in the public

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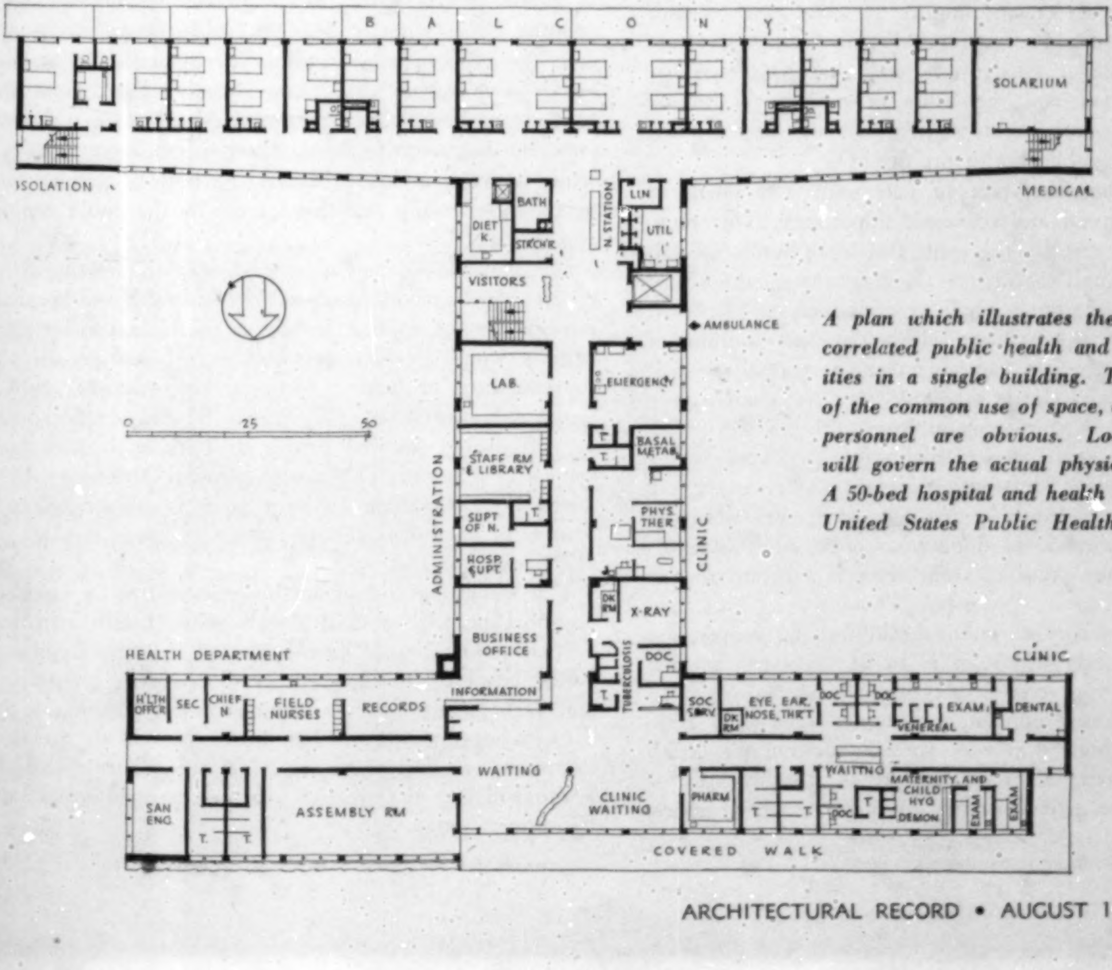
* See "Health Centers—Building Types," ARCHITECTURAL RECORD, 1940.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BASAL METAB.
STAFF RM & LIBRARY
T.
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PHYS. THER.
HOSP. SUPT.
ADMINISTRATION
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X-RAY
BUSINESS OFFICE
TUBERCULOSIS
DOC.
HEALTH DEPARTMENT
CLINIC
H'LTH OFFC'R
SEC.
CHIEF N.
FIELD NURSES
RECORDS
INFORMATION
SOC. SERV.
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DENTAL
WAITING
SAN. ENG.
ASSEMBLY RM
CLINIC WAITING
PHARM
MATERNITY AND CHILD HYG DEMON
EXAM
COVERED WALK

A plan which illustrates the principles of correlated public health and hospital facilities in a single building. The advantages of the common use of space, equipment and personnel are obvious. Local conditions will govern the actual physical allocations. A 50-bed hospital and health center plan by United States Public Health Service

eye. A larger segment of the population will become familiar with the objectives of public health programs, thereby promoting better public understanding and support.

The hospital on the other hand will benefit, too. Through the correlation of activities it will be able to offer a more comprehensive type of service. The hospital staff should benefit from a closer association with public health problems. The public health officer likewise will benefit professionally through a closer association with clinical medicine and hospital practice.

Widespread public interest and support is the lifeblood of the community hospital. Even in modern communities there are still many persons who have a marked aversion to entering a hospital and do so only as a last resort. In rural areas this attitude is even more marked. Therefore, any arrangement which introduces more people to the hospital atmosphere stimulates public interest and support.

The tangible values inherent in correlated public health and hospital activities are perhaps even more apparent. When public health was young and its functions were mainly the enforcement of sanitary ordinances, little was required in the way of facilities except simple desk space, and this was usually in the least desirable public space available. As both the science and concept of public health have developed and broadened, the need for more space and more complex and expensive equipment has grown accordingly. Unfortunately for the health of the nation, the fulfillment of this need has fallen far short of its development and realization. Now that the war has multiplied health problems and at the same time depleted public health personnel, the inadequacies in public health facilities in common with other health and hospital facilities have been brought sharply into focus. During the war a considerable number of community health centers, modern in design and equipment, have been built with federal assistance.* Now that a pattern has been established and the value of modern health facilities demonstrated, it is certain that we have entered a new era of public health practice.

We are, therefore, face to face with a problem of considerable social and economic importance. This problem must be met by the state and local health officials of the nation and the directors and trustees of the public and voluntary hospitals. Shall we each continue to go our separate ways and duplicate within the same community expensive construction, equipment and personnel, or shall we correlate our efforts wherever possible? In the face of a rapidly growing demand for health services of all kinds, we are confronted with rapidly rising costs which threaten a wider distribution of these services. Every effort, therefore, must be made to cut costs wherever possible. Elimination of duplication of facilities and personnel wherever possible is one important means to this end.

While the theory of public health-hospital cooperation is applicable everywhere, it is to be expected that the practice will vary considerably from place to place. In urban centers, the population group is sufficiently large to permit a high degree of specialization in all health activities. Where this is true, there is probably little or nothing to be gained from any joint usage of space, equipment or personnel by different organizations. It is in the communities where the population groups are smaller and the necessity for economy greater that a fuller integration of all health facilities and services assumes greater significance.

There are now 1,835 full-time county and district public health organizations in operation throughout the country. These are financed through federal, state and local funds. Plans are now being formulated by the American Public Health Association which it is hoped will result in the provision of public health services to all the counties of the nation.* It is safe to say that a majority of these existing organizations are operating in inadequate and unsatisfactory quarters. In many of these health jurisdictions, and in those to be set up, we may confidently expect to see modern facilities provided in the near future. In many of these communities there are now first class hospitals well staffed and equipped to assist in many of the more technical public health functions. In other communities with public health programs, no hospitals are to be found. These facilities will have to be provided in the near future. From the standpoint of both cost and efficiency, it is important that the so-called preventive and curative health measures be integrated as closely as possible. Indeed, in the most isolated and sparsely populated areas there seems to be no alternative but to furnish hospital care in health centers as a part of the public health program.

In the accompanying illustration one application of the principles under discussion is shown in the first floor plan of a fifty-bed rural hospital. Here the public health facilities are an integral part of the hospital plan. Both the hospital features and the public health features are designed to serve a community of around twenty-five thousand. It will be noted that one wing serves entirely as administration space for the public health staff. The opposite clinic wing is designed primarily to accommodate the type of clinic ordinarily conducted by public health departments. This same space is also usable for such out-patient work as the hospital may see fit to carry on. The diagnostic facilities shown in the central wing, while perhaps serving primarily the hospital patient, are nevertheless readily available for use by the public health department.

The plan shown herein is presented primarily to illustrate the principle of correlated public health and hospital facilities. In the application of this principle, considerable latitude would be both permissible and desirable in accommodating to local conditions. For example, public health administration space might be completely separated from the hospital proper as long as it was conveniently adjacent. The actual physical arrangement is relatively unimportant so long as it is convenient and permits of the fullest common usage of space, equipment and personnel.

This discussion should not be construed as an implication that hospitals should absorb public health activities or that public health should assume the responsibilities of the hospital. On the contrary, it is clearly recognized that each has its special function in the community. It is to be hoped, however, that the future will see a closer alignment of effort to the end that the dollars spent for health will give the greatest possible return in social and scientific values.

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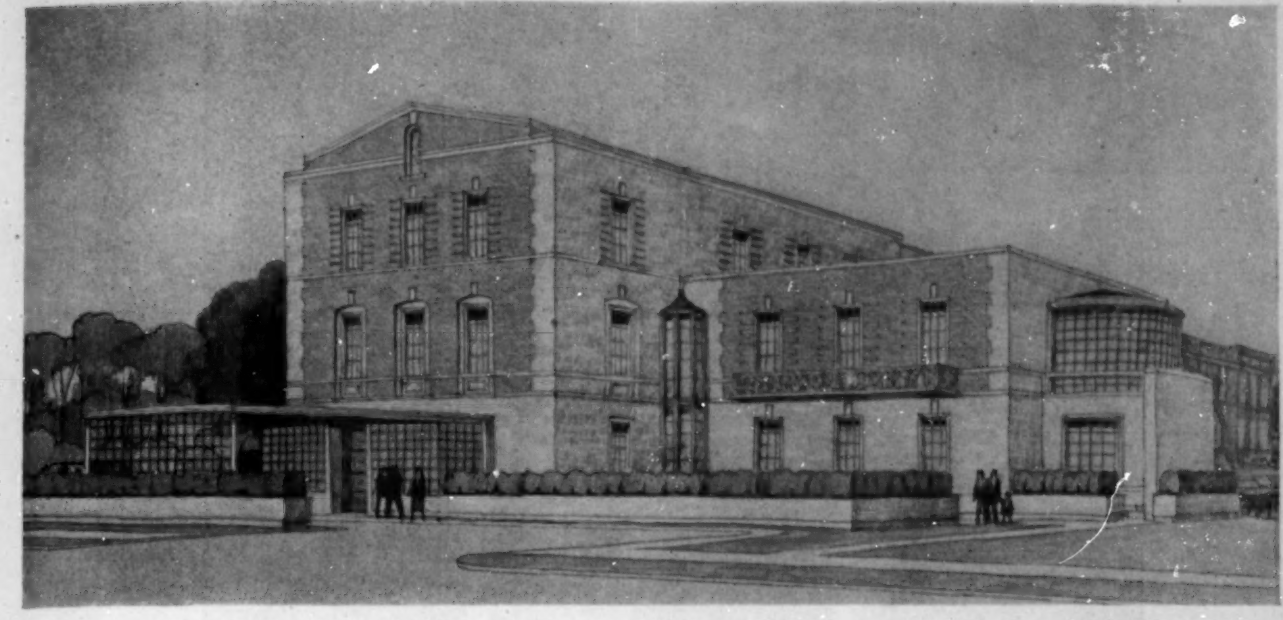
* "Public Health Centers," ARCHITECTURAL RECORD's Building Types Study No. 67, ARCHITECTURAL RECORD, July, 1942.

* Journal American Public Association, April, 1943



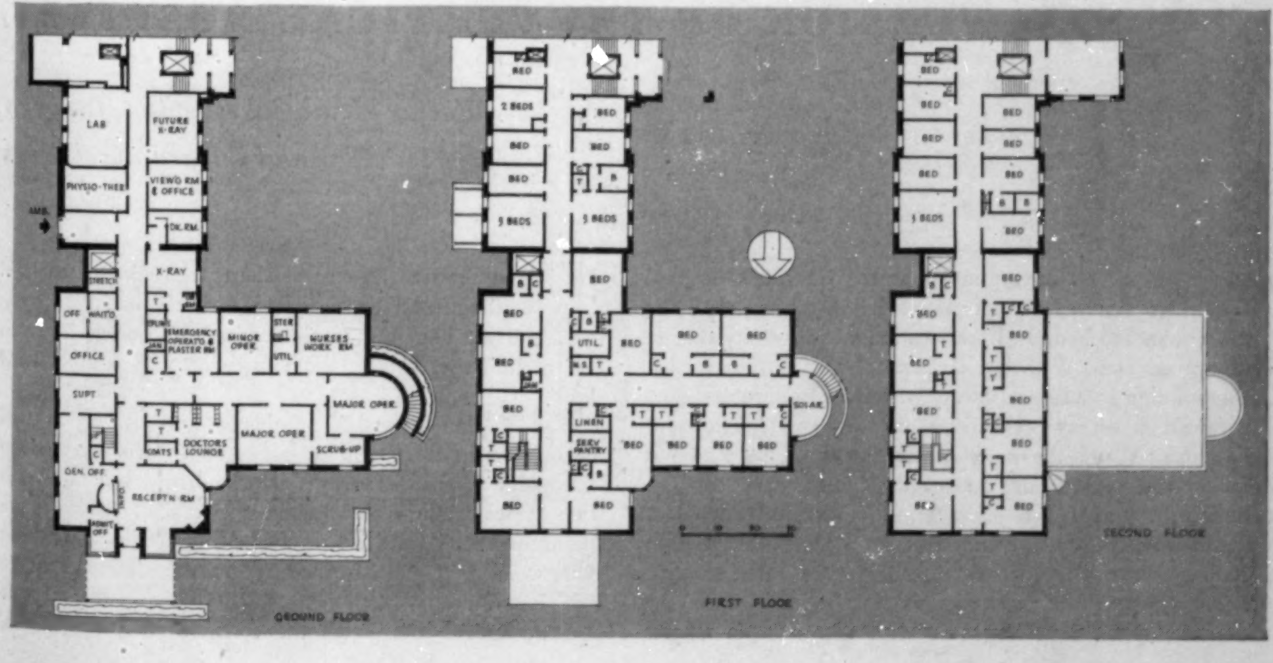
PLANNED NOW FOR POSTWAR EXPANSION

Schmidt, Garden and Erikson, Architects

An addition to this 55-bed general hospital became necessary when occupancy records showed an urgent need for expansion. This addition, planned for postwar construction, will provide 46 beds as well as operating suite, x-ray department, laboratory, business offices and physical medicine room. The existing building provides a sufficient number of ward and semi-private accommodations, and the old surgical suite is to be converted into additional small wards, thus adding further to the hospital's bed capacity; therefore, most of the beds in the new wing are in private rooms.

The addition will be at the rear of the existing hospital where the ground drops away from the old building. Hence, the ground floor of the addition is above grade.

The surgical department and emergency room are adjoining for maximum convenience to doctors and for best use of equipment. Note also the ambulance entrance in close proximity to the elevator.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PHYSIO-THER
VIEWG RM & OFFICE
AMB.
DK. RM.
X-RAY
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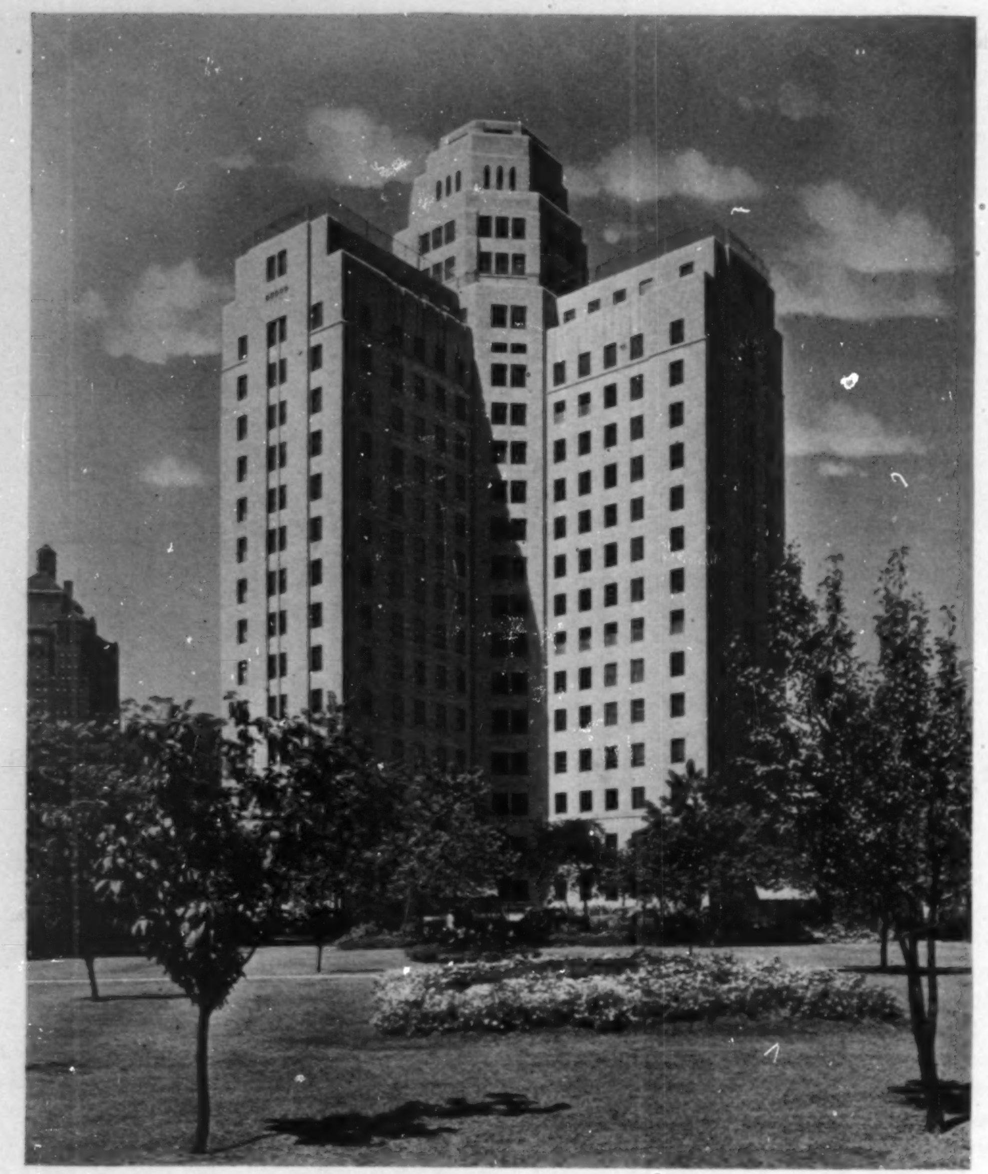
MINOR OPER
STER
UTIL
NURSES WORK RM
SUPT
MAJOR OPER
MAJOR OPER
DOCTORS LOUNGE
COATS
SCRUB-UP
GEN. OFF
INFO
RECEPTN RM
ADMIT OFF
GROUND FLOOR
BED
2 BEDS
3 BEDS
UTIL
LINEN
SERV PANTRY
SOLAR
FIRST FLOOR
SECOND FLOOR



NEW VERSION OF THE VERTICAL HOSPITAL

Wesley Memorial Hospital, Chicago

Thielbar and Fugard, Architects

HERE there was no argument as to whether a hospital should go upward or outward. The program called for more than 500 beds and the location was in a city district of limited area. With the decision almost automatic that the building should go upward, the principal problem was to avoid as far as possible the deep narrow canyons for light courts and the dark rooms and rows of windows facing each other that have been characteristic of high buildings. It was also desirable, of course, to provide as much sunlight and direct outlook as possible for each room.

After a great many studies, it was decided to use the double-V plan. Two large V's with wings at 90° angles are joined against the central shaft, the point of each V being at the center. Each of these side elements is a complete nursing unit; the number of beds in each varies from 18 in the better private room section, to 38 on the ward floors.

The V plan offered a number of advantages, as will be evident in the plans on pages 86-89. An outstanding advantage is that it permits good nursing control. With the nurses' stations located in the central shaft at the point of the V, the nurses have full vision along both wings. Also, of course, they are at the closest point to the maximum number of patients' beds. The service rooms, located just across the corridor from the nurses' stations, are also close to the patients' beds, and convenient to the elevators in the central shaft. In the same way, the nurses have direct access to the central transportation system. Moreover, the corridors in the wings carry no traffic not directly involved with the area in question.

The V plan also provided a very logical main artery for vertical traffic. And, with the juncture of the two V's somewhat elongated, the crossroads between vertical and horizontal traffic are exceptionally workable.

As for the crossroads, the double corridor in the central section affords a logical traffic separation. The service elevators and service rooms are grouped off to concentrate service traffic in the rear corridor. Passenger traffic is similarly concentrated in the opposite one. Off this corridor are grouped such heavy traffic facilities as offices, waiting rooms, nursery, out-patients, library, toilets, etc. An obvious advantage of this separation is that passengers are not greeted in the elevators by stretcher cases, and contrariwise, passengers do not interfere with important service traffic.

The whole scheme develops logically the inherent advantages of the tall building. Such service rooms as kitchen supplies and linen rooms have direct access to the vertical transportation and are closer in point of time to the areas to be served than if they were a similar distance away on the same floor. The speeding of service and economies in operation are obvious. The food service and supply system warrants special scrutiny of the plans in this respect. The hospital's central shaft, or "main street," includes nursing service, dumbwaiters and conveyors, linen and rubbish chutes, pneumatic tubes, and also, of course, the ventilating and pipe shafts. The main kitchen on the second floor has tray conveyors serving lower floors and high speed food lifts to the food service rooms on the upper floor. The pneumatic tube system connects each nursing station with the central supply group, the kitchen, the record room, and accounting office.

A hospital planned in this way naturally is dependent upon the vertical transportation system. The elevators, it will be noted, have been grouped in such a way that the traffic separation is practically automatic. In recognition of the distinct types of service that the elevators must perform, they are divided into two groups—one of the high speed passenger type running at office building speeds, and one of the hospital type for service, personnel, carts, stretchers, and the like. The central car of the five does duty for either type of service. It can be switched to either service for peak traffic periods—probably service in the morning, and passenger traffic in the afternoon and evening. This car is available for night periods when it alone can easily provide all of the elevator service required. It has double controls, so that it can be operated by push button system or manually.

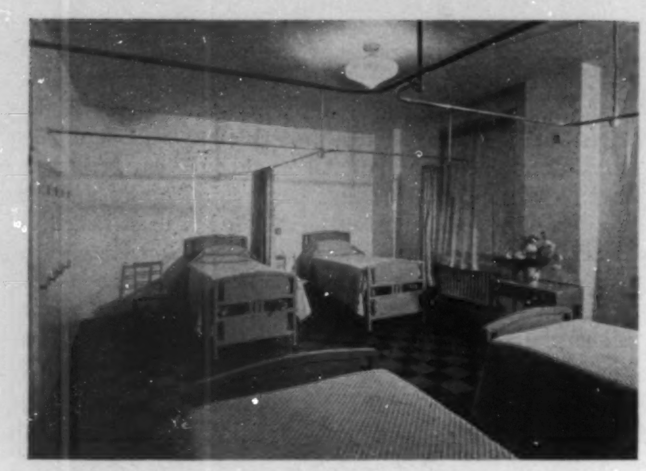
After the main scheme for the building had been determined, some study was given to the disposition of various areas on the upper floors. Factors involving the location of the building were largely responsible for the placing of the patients' quarters on the upper floors. The building is less than a quarter of a mile from Lake Michigan, separated from it by the downtown campus of Northwestern University. To the northeast and south, the upper floors have a view of Chicago's lake front. The hospital property has city streets on three sides. While they are not congested, noisy streets, they are not as clean and quiet as in a suburban location. Thus the patients' rooms were put at the top for both quiet and views. With a good elevator system, this placing of patients' rooms rather simplified than complicated the problems of traffic on the lower floors.

The plans could be analyzed almost indefinitely for solutions to minor traffic problems. For instance, on the surgical floor with its 12 operating rooms, pedestrians from the passenger elevators can be shunted to the out-patients' dressing room, to the doctors' lounge, or to the urological diagnostic unit without getting into the surgical corridor.

Urology, bronchoscopy and plaster work of this fourth floor have been concentrated in one wing of the surgery to simplify the work of the x-ray technicians coming from the floor immediately below. X-ray and pathology laboratories, as well as the basal metabolism and cardiography

Left: main floor lobby. Right: visitors' waiting room, looking toward the lobby

Chicago Architectural Photographing Co. Photo



Left: view of a typical four-bed ward. For each patient there is a steel locker (left)
Right: part of a private patient's room in the de luxe section, on the sixteenth floor

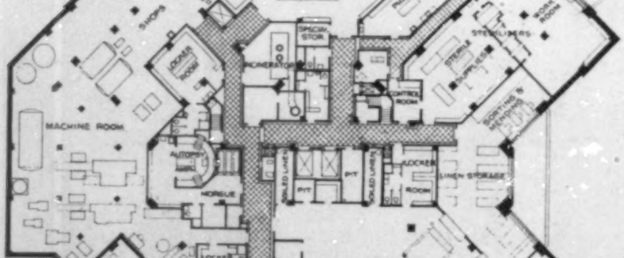
departments, are on the third floor, not too far from the street for the out-patient and ten seconds by elevator from the floors containing patients' rooms.

The finishes of all types of patients' quarters are plain and also uniform, although there are, of course, differences in the furnishings. Finishes throughout were selected largely on the basis of ease of maintenance. Walls in the operating, obstetrical, scrub-up, and similar spaces have a high wainscot of ceramic tile with plaster above. Kitchen, laundry, storerooms, etc., and all service corridors have walls of glazed brick with glass block in exterior walls. Other walls are painted plaster. Inside window sills are of stainless steel to avoid the continuous painting or refinishing. Metal frame door bottoms are precast terrazzo or stainless steel, and all room bases or mop boards are made of the ashphalt tile or the rubber of the adjoining floor. Stair handrails are of extruded aluminum.

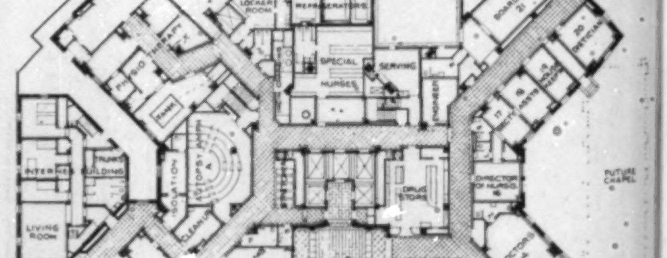
Terrazzo was used for floors in operating and service rooms, and the laboratories, also for certain of the corridors. Laundry and engine rooms have cement floors; kitchens, quarry tile; patients' corridors and some of the bedrooms, rubber tiles; other floors are asphalt tile. Ceilings in kitchen and dishwashing rooms are of metal-faced acoustic tile. Dining, waiting and board rooms, library, and patients' corridors have a precast acoustic tile for the ceiling.

Doors to patients' rooms and wards were made 4 ft. wide, so as to permit moving a bed through them. The problem of properly hanging a 4-ft. door was solved by the use of a light veneered wood door on a cellular instead of a solid core. This type of door is also inexpensive and light, the latter advantage being quite a factor in the heavy traffic in a hospital.

In order to save space and also to maintain cleanliness, the hospital buys its steam from Northwestern University. While the purchase of steam is no more expensive than operating a central heating plant, provisions have been made for future installation of boilers and a stack as a

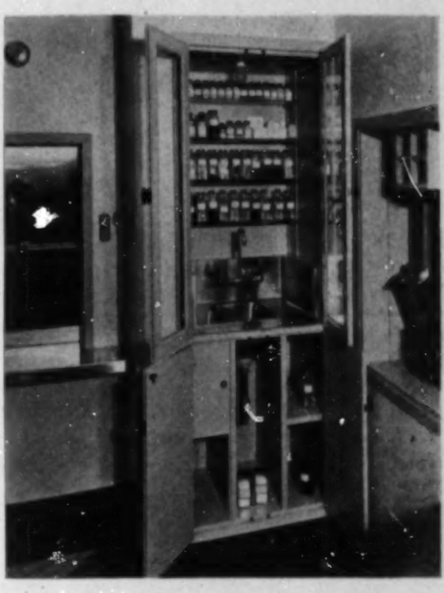

GENERAL SUPPLIES
SHOPS
PHARMACY
WORK ROOM
STERILIZERS
STERILE SUPPLIES
SPECIAL STOR
INCINERATOR
LOCKER ROOM
CONTROL ROOM
SORTING & MENDING
MACHINE ROOM
AUTOPSY
MORGUE
SOILED LINEN
PIT
LOCKER ROOM
LINEN STORAGE
TRANSFORMERS
SWITCH BOARD
LOCKER ROOM
LAUNDRY

BASEMENT FLOOR PLAN


PREPARATION
KITCHEN
STORES
STAFF ROOM 22
FAN
RECEIVING
LOCKER ROOM
REFRIGERATORS
BOARD ROOM 21
20 DIETICIAN
PHYSIO THERAPY X
SPECIAL NURSES
SERVING
ENGINEER
17 SECTY
18 ASST'S
INTERNES BUILDING
AUTOPSY AMPH. A
ISOLATION
DRUG STORE
DIRECTOR OF NURSG. 16
FUTURE CHAPEL
LIVING ROOM
CLEANUP
OPERATING B
DOCTORS
AMBULANCE ENTRANCE
BUSINESS
EMERGENCY C
UTILITY
TELEPHONE
CASHIER 5
ASST SUPT
SECTY 10
SUPT
WAITING
ADMITTING
3
2
1
NORTH

FIRST FLOOR PLAN

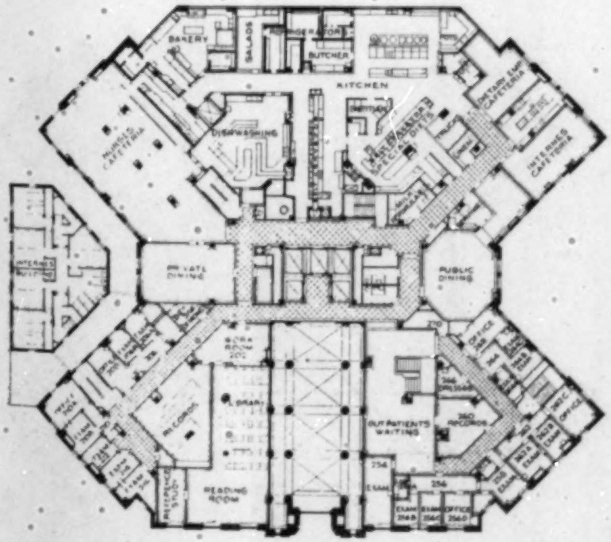
Left: desk and signal panel in nurses' station. Right: nurses' station from corridor
Below: medicine cabinet, supply dumbwaiter, pneumatic tube, in nurses' station



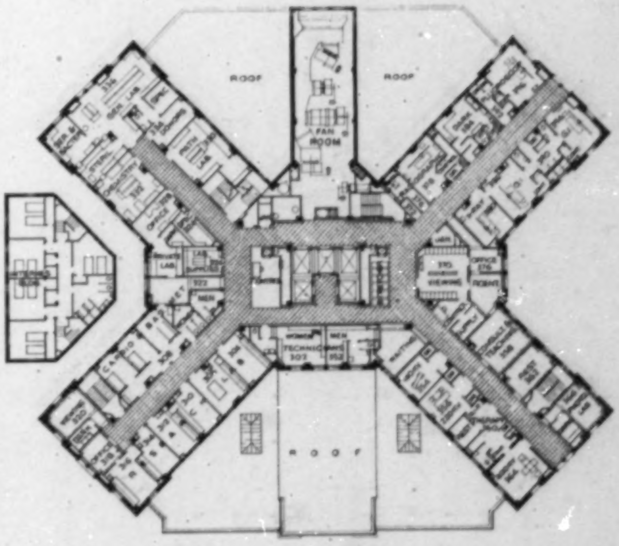
safeguard against any power difficulties in the future. Steam is received at a header pressure of 150 lb. and is reduced as required for the laundry, the various pumps, etc. The pumps which operate most continuously discharge steam at 50 lb. into an intermediate line for heating and some other purposes. A set of pressure-reducing valves furnishes makeup steam to this intermediate header in case the exhaust from turbines should be insufficient.

The heating system is of the zone control type, with inside-outside thermostats, to compensate for various effects of sun and wind. There are four principal zones in the building. In all operating and delivery rooms, the temperature is controlled to maintain an even 80° F., with a relative humidity of 60 per cent.

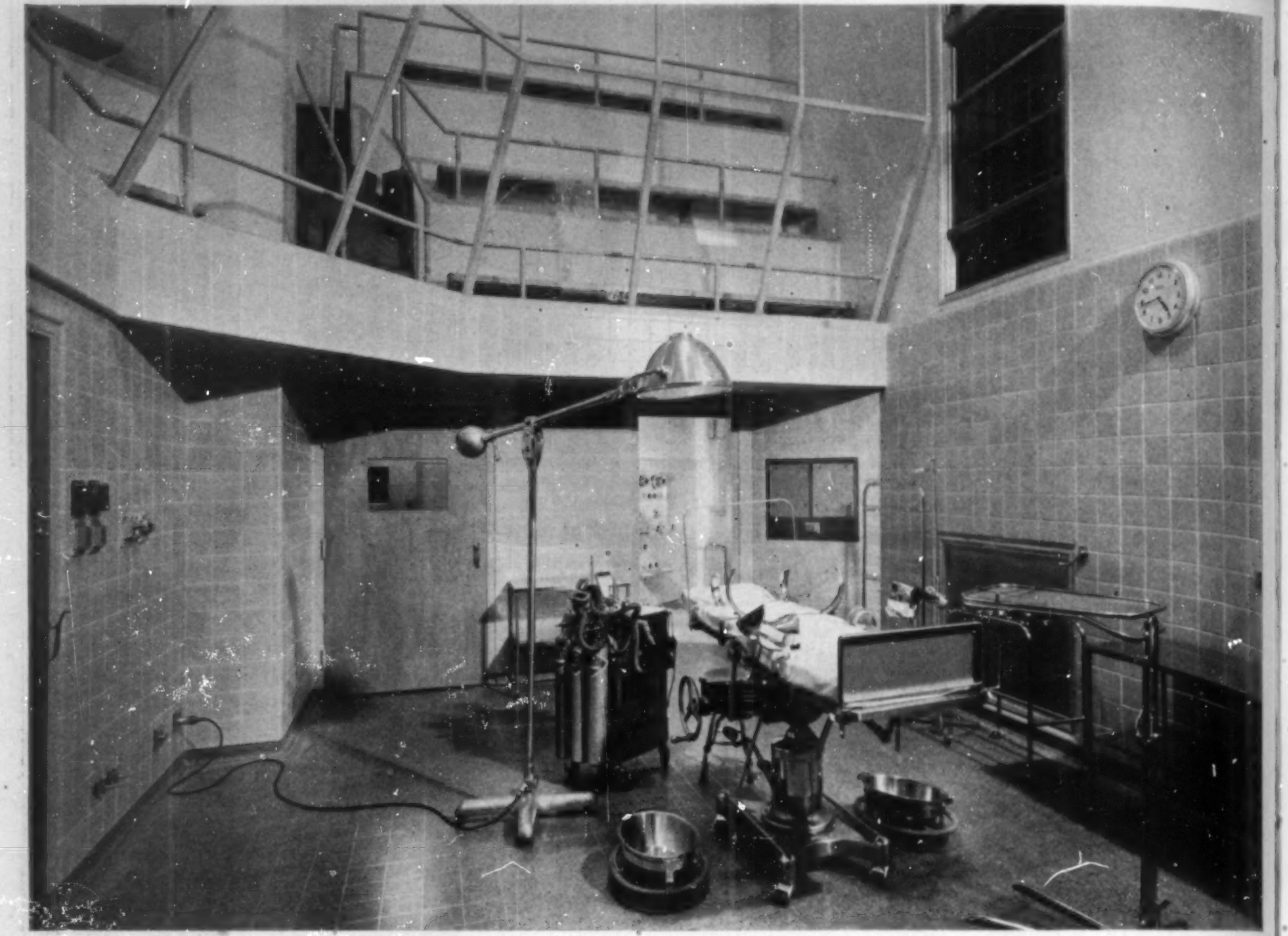
Complete air conditioning is provided for the main lobby, staff and board rooms, administrator's office, waiting rooms, and two floors of patients' rooms. A conventional system of ventilation is provided for all toilets, utility rooms, lockers, nurses' stations, work spaces, and


BAKERY
SALADS
REFRIGERATORS
BUTCHER
KITCHEN
DIETARY EMP. CAFETERIA
DISHWASHING
SPECIAL DIETS
NURSES CAFETERIA
INTERNES CAFETERIA
INTERNES SUITE
PRIVATE DINING
PUBLIC DINING
BOARD ROOM 201
OFFICE
RECORDS
LIBRARY
OUT PATIENTS WAITING
260 RECORDS
254
256
EXAM
EXAM 256B
EXAM 256C
OFFICE 256D
READING ROOM
REFERENCE STUDY

SECOND FLOOR PLAN


ROOF
ROOF
FAN ROOM
336
LAB
OFFICE
PRIVATE LAB
LAB SUPPLIES
322
MEN
WOMEN
TECHNICIANS 307
312
CARDIO
315
VIEWING
OFFICE 316
ROBAT
ROOF

THIRD FLOOR PLAN

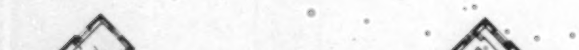


An operating amphitheater, fifth floor, with glass-enclosed observation balcony. All twelve operating rooms have specially controlled air conditioning

laboratories. This requires in all 12 ventilation systems.

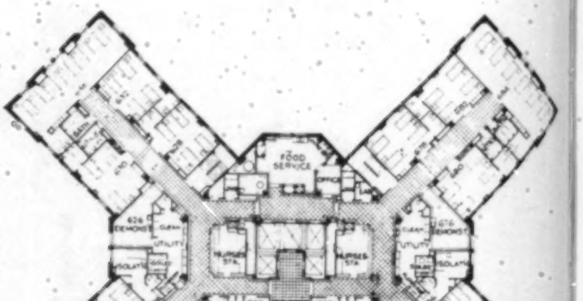
Three channels of radio are wired throughout the building with station selector switch and volume control at each bed location. At each ward station a jack is provided for plugging in a pillow phone and at each private room station a small speaker is furnished.

The nurses' call system for wards is a silent light annunciator type operated by means of a cord and push-button. The call system for private rooms consists of a



SUPPLY DISTRIBUTION
OPERATING
ANESTH
STERIL
NURSES LOCKERS
416 WORK ROOM
INSTRUMENTS
OPERATING
CONTROL
OFFICES
DOCTORS LOCKERS
REST ROOM
CYSTOSCOPIC
FRACTURE

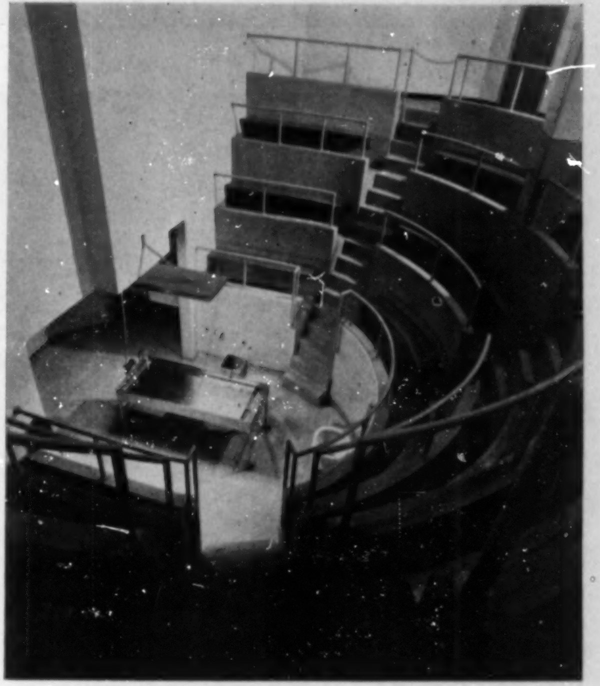
FOURTH FLOOR PLAN



FOOD SERVICE
OFFICE
626 DEMONST
CLEAN
UTILITY
ISOLATN
NURSES STA
676 DEMONST
602
VISITORS WAITING
652

SIXTH FLOOR PLAN

Right: view of the large utility room, just opposite nurses' station at each end of central section
Below: autopsy amphitheater (the one on first floor)



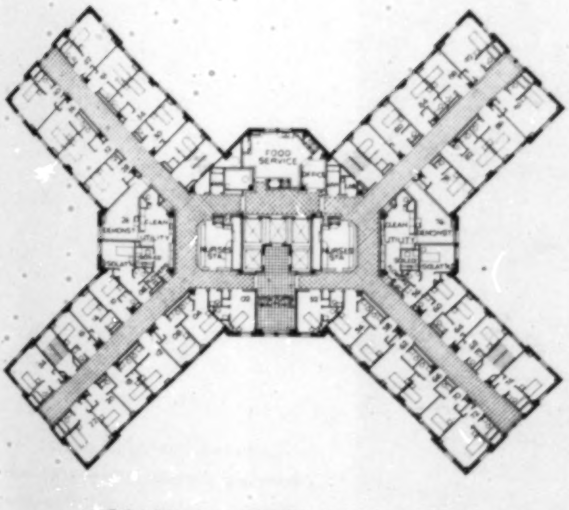
typical bedside station with cord and calling button and provides two-way conversation. When the nurse at the desk calls a patient, radio reception is cut off automatically until the nurse closes her key. The nurse can thus determine the condition of all patients at any time without leaving her desk since the calling system is given precedence at all times.

In the de luxe rooms a "privacy feature" enables the patient to throw the selector to "private," eliminating the pickup of sounds from the room. The speaker remains operative, however, and announcements from the nurse to the patient may be heard at all times.

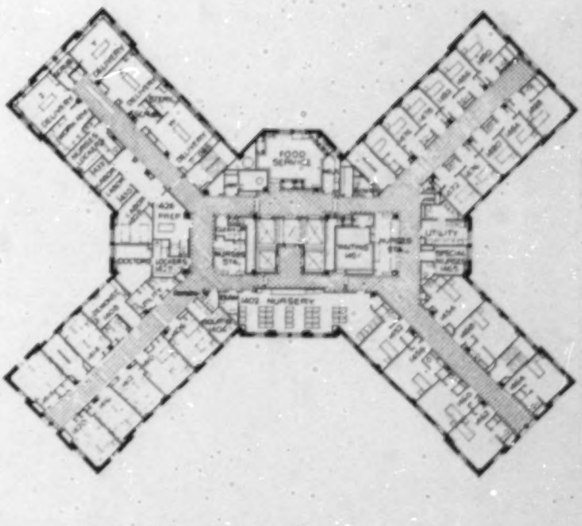
As for the general construction data, this 20-story unit is designed to be the center of a new group of hospital buildings. This one has a total capacity of 535 beds. Incidentally, since it is a big city hospital, accommodating acute cases almost entirely, there was little need for day room space on the individual patient floors. There is, however, considerable space with splendid lake views developed on the 17th and 18th floors for patient lounges and solariums. On the 17th floor, the roofs of the four wings are available; they are floored with asphalt plank, and the plumbing vent pipes are covered and arranged to form a frame for a canvas marquee. It is possible to move a bed from any patient quarter out onto one of these roofs.

The building is of reinforced concrete frame with reinforced concrete joists and slabs. It is built upon a foundation of wood piles because this part of Chicago is largely filled land. Exterior walls are Bedford stone with brick backing; interior partitions, clay tile and glazed brick.

The exterior treatment was largely dictated by the architecture of the adjoining university buildings, thus the decorative motives are largely Gothic. However, the architects have "made no sacrifice of light and air, have built up no useless masses of masonry in order to achieve archeological correctness."

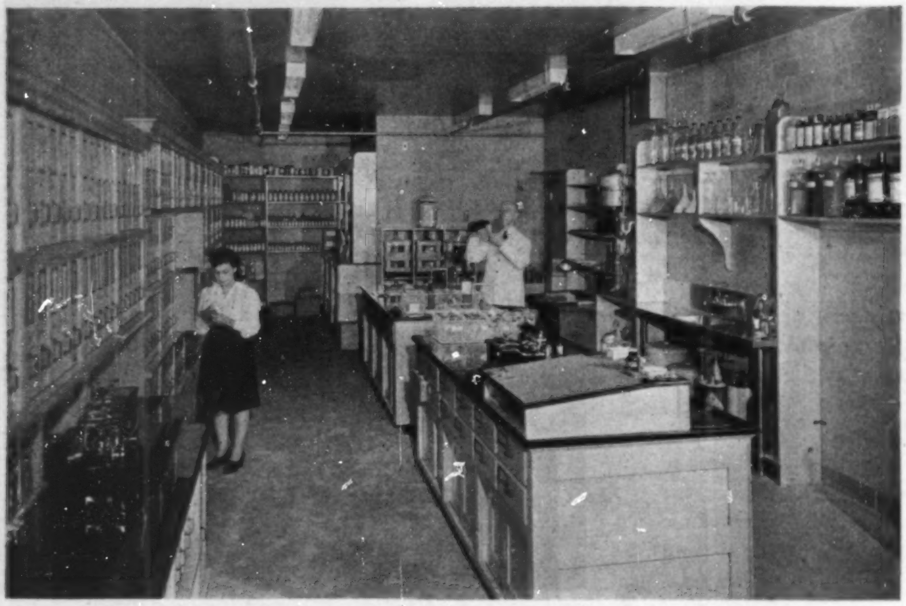


TENTH ELEVENTH & TWELFTH FLOOR PLANS



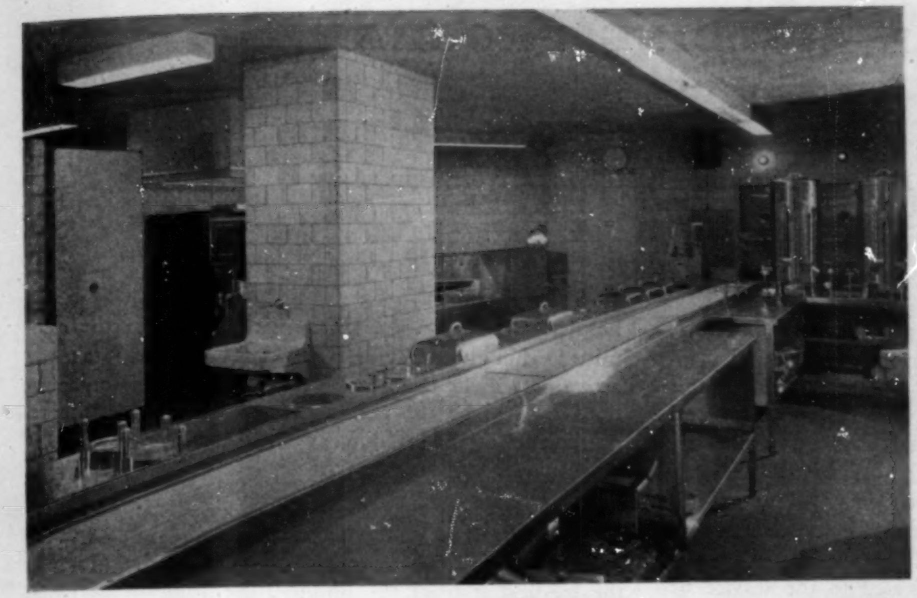
OURTEENTH FLOOR PLAN

Nurses' cafeteria (see second floor plan) has acoustic tile ceiling, asphalt tile floor, mechanical ventilation system

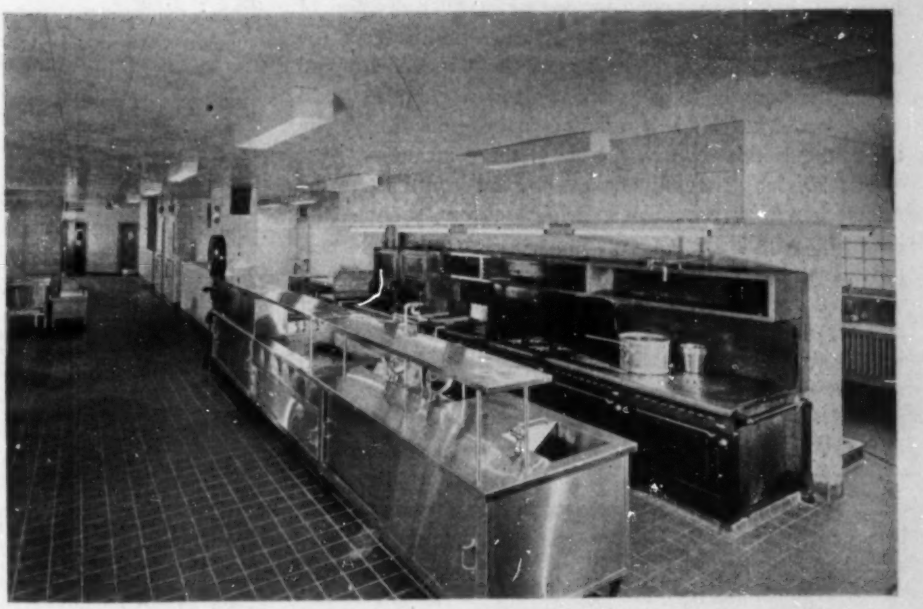


Main pharmacy, in the basement, is located in the center of a large area devoted to general and sterile supply rooms

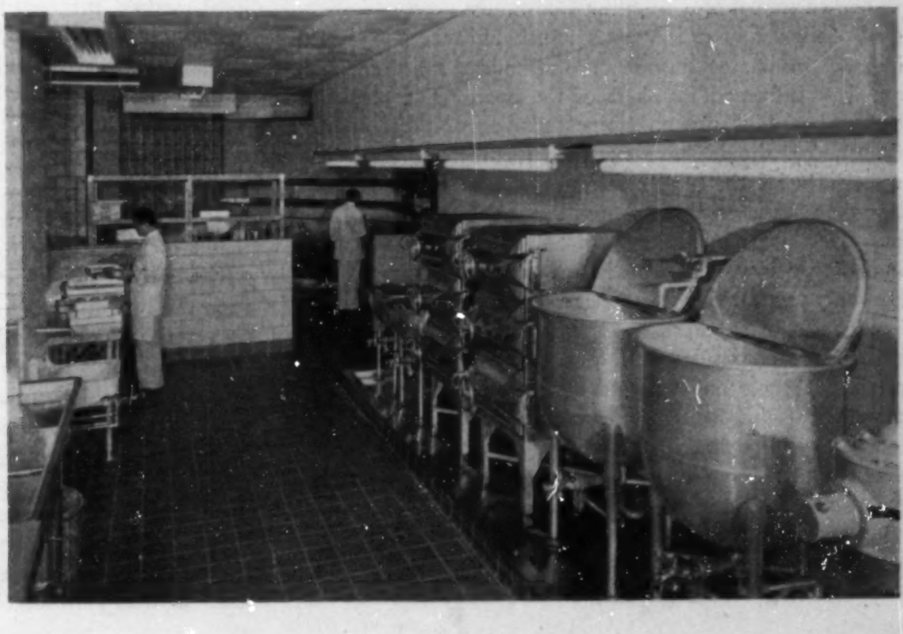
Representative of many of the seemingly endless array of laboratory rooms is this pathological laboratory, third floor



Tray assembly belt in main kitchen feeds automatically into a vertical tray conveyor serving patients' floors above



Range section of the huge main kitchen, on second floor, which like most large kitchens, is thoroughly departmentalized



Vegetable section of main kitchen (second floor) has metal-faced acoustic tile ceiling, glazed brick walls, tile floor

THE HOSPITAL BUILDING PROGRAM

By C. W. Munger, M.D.,
Director, St. Luke's Hospital, New York City

MONEY ALONE will not create a good hospital building. It has come to be generally recognized that hospital planning is a serious and complicated matter which requires the highly coordinated efforts of owner, architect, and consultant. To undertake to plan, construct, equip, organize and staff a modern hospital is to assume a serious responsibility.

With few exceptions, hospitals must be looked upon as community service institutions. The hospital is usually an eleemosynary corporation, dedicated to the service of the public, although, in increasing numbers, we encounter hospitals which are owned by one or another division of government. In a very limited number of instances the architect will encounter the proprietary type of hospital whose purpose is to earn money for stockholders and whose activities can be presumed to be guided more by the profit motive than by service to the community.

The original suggestion that hospital construction be undertaken may arise from various sources, such as the board or administration of a hospital, the medical staff, the demands of the community itself, or some official or unofficial body interested in hospital care. The first logical step for such a hospital board (or other ultimate controlling authority of the hospital) to take is to call a preliminary conference within its own organization. Usually, after general discussion, the board will name a committee of its own membership to study the proposal. In the appointment of such a committee the board should consider the probability that the same committee may later become the Building Committee, to supervise the construction project.

Building Committee

The personnel of a Building Committee need not necessarily follow any rigidly set pattern. However, it should include, insofar as possible, the strongest, most devoted, and best informed members of the board. The president of the board, if not an active member of the Building Committee, should have ex-officio membership. It is the writer's belief that the committee should consist of not less than three and not more than five members of the board. A larger committee would be unwieldy for making decisions which will be necessary throughout the building project. Should the hospital have a board member who is an architect, he, or his firm, of course, will be ineligible for consideration for employment by the hospital, but such an architect might be a very valuable member of the Building Committee. However, persons technically informed about construction are not absolutely essential to a properly functioning committee. The members of the committee should be practical people, preferably persons accustomed to take responsibility in large affairs.

In addition to the president, the administrator of the hospital should have ex-officio membership in the committee, should attend all of its meetings and take an active part in its deliberations. In most hospital organizations he will be the person best informed as to the requirements of the building.

Conferences

The larger committee above mentioned should call a series of conferences to include a representative group of the medical staff of the hospital, the administrator, and such of his departmental heads as are appropriate. At these conferences, there should be the fullest discussion, within the family circle, of the supposed needs for and of the building, and the thoughts of the group in attendance should be fully explored.

New Institutions

In some instances, the proposed hospital construction may be for an entirely new institution, viz., neither an addition to, nor a replacement of, an existing hospital. In such instances, the procedure described in the preceding paragraphs is somewhat different, although it should follow the same general lines. If a controlling board has not been organized, one should be set up in accordance with the laws of the particular state, as a membership or eleemosynary corporation. The importance of this can scarcely be over-emphasized. Success in the development of the future hospital will depend upon the care with which its basic charter and its by-laws are prepared. The new board would select its committees in much the same manner as an existing board. It would not have its own group of physicians or an administrative staff with which to consult, but it would, logically, confer with the local medical profession and local social welfare agencies in rounding out its original thinking upon the need of a hospital. In this particular situation the early engagement of a hospital consultant is especially imperative.

Expert Advice

In either of the above situations, viz., the existing hospital or the entirely new hospital, it is highly essential that the board concerned shall secure the most expert advice possible, *first,* as to the desirability of proceeding with the building program and, *second,* as to the general size of the program and the general content of the building or buildings to be constructed. In a few situations, a hospital's own administrator might be able to present an objective report of a study of these matters. In general, he is too busy with his regular administrative duties to undertake this responsibility and, in many other instances, the administrator would be inexperienced in the conduct of the necessary surveys and, despite undoubted ability as an administrator, would not be the person to select for this function. In such event, the employment of a suitably qualified hospital consultant is the next step for the board to take.

The essential qualifications of a hospital consultant have never been thoroughly defined. He is usually a person in the active administration of a hospital, or previously engaged in such work who, through study and experience, has developed particular ability in studying hospital requirements, and translating them into building programs.

The consultant alone, or with the aid of members of his staff, will study the community in relation to the proposed hospital development and will carefully study the needs and potentialities of the existing institution.

State, regional and city planning data should be considered when available and, if reports are available from certain bodies relating particularly to hospital developments, they will, of course, be utilized. The consultant may decide that the proposed building project is unnecessary. In completely preventing ill-advised hospital construction, a consultant provides a valuable service. He should be encouraged to be entirely objective in presenting his conclusions upon this point. If the consultant concurs in the need for construction, his report should outline in considerable detail the number of beds, their distribution, class of accommodation, and age, sex and medical classification. He must designate what auxiliary and specialized facilities the particular building will need to provide, not only for the new beds which may be added to an existing plant, but for a suitable rounding out of the service of the hospital as a whole.

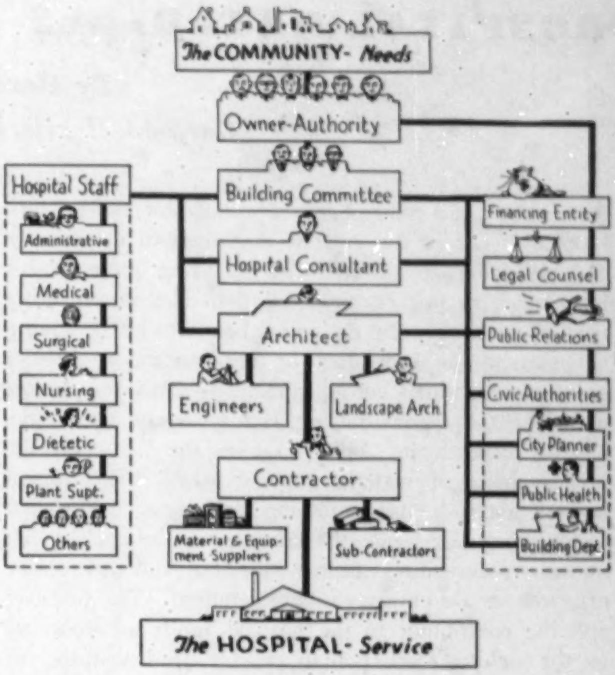
The Architect

Having in hand the well-considered report of needs and requirements, the board should proceed to employ the architect. The decision as to what architect to employ will require various considerations. The architect's previous experience in hospital construction becomes an important consideration. The board will review with care the past record of the particular firms under consideration as to general variety, volume and success of past work. Having determined the financial responsibility of the architects, the board will make inquiry of other owners for whom they have worked as to each firm's reputation for honorable and truly helpful relationships with owners during the actual course of planning and the supervision of construction.

The employer of an architect needs to know something about the individuals within the firm who will handle the particular job. It is always important to inquire about the qualifications of the architect's engineering staff, or, if he uses a cooperating firm of engineers, to know its qualifications.

Contracts

The board should enter into a written agreement with the firm selected. This agreement must define, in detail, the responsibilities the architect is to assume, the method of determination of the fees which are to be paid, the handling of extras, late revisions in plans, and like matters. The agreement should take cognizance of eventualities which could occur in connection with the project. For instance, should the plans be prepared, but the building be not finally constructed according to those plans, there should be an understanding as to what the owner's obligation shall be. The extent of the supervision expected of the architect should be clearly defined. A board, inexperienced in such matters, may well confer with other hospitals which have had such experience. Many potential arguments may be avoided by careful attention to the original agreement.



A typical organization chart of the principal factors in the Hospital Building Program showing in connecting lines the most usual direct contacts between the various factors. Policy and program, and decisions regarding hospital requirements, are determined in a series of early conferences between principal groups, administrative, medical and technical

It is conceivable that the consultant who made the original survey as to the need of the construction project may not be available, or might not be qualified, to proceed as consultant to the owner and the architect in the development of the actual plans. In any case it is essential that such a consultant be employed by the board. His status in the entire project shall be clearly outlined to and established with the architect, and with the consultant himself. A written agreement with the consultant is advisable.

Financing

At some point in the realization of a building project, the question of financing becomes a prime factor. In some projects, funds will already have been in the hands of the hospital to finance the work. Usually, the reverse will be the case, and, following the preliminary planning of the proposed construction, the hospital board will want to undertake the raising of the necessary funds. In such instances, it is quite usual for the board to authorize the architect and consultant to develop preliminary plans to a point at which rough estimates may be secured on the probable cost of the proposed construction, basing the amount of money to be raised upon such estimates. At this juncture it is often desirable that the architect pro-

(Continued on page 146)

HOSPITAL MATERIALS AND EQUIPMENT

By Alexander C. Robinson, III, F.A.I.A.
Garfield, Harris, Robinson & Schafer, Architects

THE DESIGN and construction of an efficient and modern hospital is one of the greatest challenges to the abilities and education of an architect, requiring more of his knowledge, experience and skill than almost any other type of building. In designing hospitals he is serving not merely one individual or one particular class or group of individuals but all humanity—and when it most needs help. Upon the satisfactory operation of the hospital depends its ability to cure the ill; upon the proper choice of materials out of which that hospital is built depends its continuing usefulness. The first cost of materials is not the criterion in the choices, but maximum durability, efficient operation and inexpensive maintenance are paramount considerations. The taxpayer and the contributor to the hospital funds are counting on the architect's selection to provide the best value for their money.

We have come a long way, through the past depression and war years, from the elaborate and over-ornamented type of hospital building—the colonnades, the ornamental cupolas, the unnecessarily thick walls. The expensive frills have of necessity given way to fundamental good sense in the choice of materials. The tried and tested materials that last the life of the building are needed and are to be specified.

Today all of us are conscious of the promise of hoped-for new materials and techniques, many of them so alluringly spread in the public press. Thank heavens there has been a recent recession in the wave of postwar ballyhoo, and common sense is reasserting itself. Architects—at least those of them who have lived through the experience of trying out new materials and gadgets on their clients without preliminary testing—are stating what history has shown to be eminently true, that fundamental changes in materials and equipment are of necessity slow and tedious. Particularly in public buildings, and more especially in those built to alleviate human suffering, no chances can be taken that will impair the practical and long-time usefulness of the building.

However, there is another side to the choice of materials and the design of hospital buildings that cautions us against over-elaboration and experimentation. Medicine is developing so rapidly and is opening up such new and constantly changing fields of activity that the hospitals we plan today may be useless tomorrow unless we keep them so simple and direct in their planning that they will not be limited or spoiled by fads and cures that have but a brief span of usefulness in the march of medical science.

Criteria. What then are some of the fundamental standards and criteria by which we are to judge the materials for a hospital building?

First and most important they must be *sanitary*, therefore non-porous as far as possible and above all easily cleanable. No building, not even the most meticulously cared-for home, is subject to such thorough cleaning treatment and scrubbing, as is a hospital. Poor choice of materials shows up here faster than anywhere else. Moreover, materials must be *durable* and of *low repair and replacement cost*. A shabby hospital is not only unattractive but unsanitary and therefore a definite handicap in the treatment of the ill. *Ease of maintenance* and quick replacement speak well for good planning.

The equipment must be reliable and operate with the maximum of *efficiency*. Untried equipment or fancy or complicated arrangements of plumbing, wiring or heating, only lead to difficulties in operation and maintenance; and an unworkable piece of equipment is worse than useless—it is dangerous. Where human lives are at stake one cannot take chances with the failure of machinery.

Another criterion by which all materials and equipment must be judged most carefully is their contribution to the *noise elimination*. Noises within a hospital are much more disturbing to a patient than are outside noises. When one is ill every squeak or bang or roaring of air is a strain on the nervous system and care must be taken to reduce these as much as possible.

With all these standards we must not forget the *appearance* of the building both inside and out. Here materials must be chosen with care to produce attractive results with the minimum of elaboration. It is possible through the proper use of materials and color to produce a cheerful and homelike surrounding in which to grow well and strong, without sacrificing the elements of economy or durability. Last, as stated before, the materials must be *economical* both in use and durability. First cost is not the final standard of judgment. In fact, short-sightedness in this matter has led to most of the "I wish I had used the better material instead of the cheap one" remarks.

Having set up a sort of table of standards we can note here some materials that have been found through use and experience to have stood the test of time.

Structural Frame. Here the number of stories immediately conditions the answer. For low buildings up to three floors in height, reinforced concrete may be economical and simple in design. For buildings over that height, steel frame is frequently indicated. Then there is the question of riveting or welding. Welding—because of the absence of noise—is particularly necessary for additions to existing buildings or for a new building in a group that is already occupied. Local laws, conditions and union rules do not always permit field welding at present, but should in early postwar years.

For floor system either a tin pan or concrete joists with tile fillers is usually best. The latter allows for the installation of piping later on. Duct work should be in vertical chases which can also provide space for piping. The horizontal runs should be in furred spaces with adequate access doors or panels.

Walls and Windows. For exterior wall construction the choice between brick, stone, terra-cotta, concrete or other materials will depend upon local conditions

ROOMS	FLOORS							BASE				WALLS							CEIL'G	
								SAME MATERIAL AS FLOOR				WAINSCOT								
	QUARRY TILE	CERAMIC MOSAIC TILE	TERRAZZO-BRASS STRIP	RUBBER TILE	ASPHALT TILE	LINOLEUM	CORK	STRAIGHT	SPLAYED	COVED	CEMENT-PAINTED	TILE	GLASS	RUBBER	BUMPER STRIP	CHAIR RAIL	PLASTER-ENAMELED	PLASTER-WALL PAPER WAX	PLASTER-ENAMELED	ACCOUSTICAL
BASEMENT CORRIDORS	●								●						●		●			●
PATIENTS' & OUT-PATIENTS' CORR.				●					●						●		●			●
UTILITY ROOMS		●	●							●		●					●			●
SERVING KITCHENS	●							●				●					●			●
PATIENTS' ROOMS				●				●								●	●		●	
OPERATING ROOMS		●								●		●					●			●
CLEANING ROOMS		●								●		●					●			●
RECOVERY ROOMS				●				●								●	●			●
LYING-IN ROOMS				●				●								●	●			●
LABOR ROOMS				●				●								●	●			●
LABORATORIES					●			●									●			●
X-RAY ROOMS					●			●									●		●	
LIBRARY							●	●									●			●
ACCOUNTING						●					●					●	●			●
ADMINISTRATION						●					●					●	●			●
PURCHASING						●					●					●	●			●
TOILETS		●						●					●				●		●	
TUBE ROOMS				●			●	●								●	●			●
CHART ROOMS				●				●								●	●			●
KITCHENS	●							●									●			●
PANTRIES	●							●									●			●
STAIRS	●							●									●			●
RECREATION			●					●										●		●
RECEPTION			●					●										●	●	
WAITING				●				●								●	●	●		
SOUND-PROOF ROOMS			●					●									●			●

A CHART OF SUGGESTED INTERIOR FINISHES

With the wide variety of materials to be available for every purpose of interior finish, there is much latitude and many alternate choices are possible. Typical choices for one hospital are indicated on the chart. Local conditions and special purposes may indicate the wisdom of other choices for the particular hospital being planned.

and the design of the building. Terra-cotta, as a rule, is not as satisfactory as other materials in the long run. Reinforced concrete must be used with understanding of its limitations under particular climate and dirt conditions. For spandrel construction under windows, brick and tile furred for waterproofing is usual. Allowance must be made where the walls are thinner for the installation of special radiators under windows.

The best all-round windows we have found to be the wood double-hung with pivot features for the ease of cleaning and operation for ventilation. It provides insulation and avoids some condensation difficulties. Glass block may be used in cases where light and no ventilation is desired and where the design permits. There are also places where borrowed light is necessary and where glass block is very useful in interior partitions.

Interior partitions are usually tile, gypsum or a similar material. Steel studs and lath are often useful, however, to accommodate pipes and ducts in special cases. For interior doors a flush steel buck and trim with flush panel doors are most satisfactory in design and appearance and are easily cleaned and maintained. The old fashioned flap doors for private and semi-private rooms are still an excellent means of providing ventilation and privacy.

Interior Finishes. The accompanying table gives a selection of materials for interior finishes. Necessarily it is not complete in all details, but it may serve as a general guide as it is based on the experience gained in a number of buildings. If new materials do not appear in this list it is because they must be tested and proved in actual use before an architect dares use them in buildings as important as hospitals.

The Mechanical Plant. For hospital heating systems, vapor or low pressure steam is usually preferred. Direct radiation is most easily cleaned. If convector type of radiation is used, the convectors must have fronts that can be easily removed for cleaning. A weatherstat to anticipate temperature changes is most desirable to prevent over or under heating in climates where there are apt to be rapid changes in the weather. Zone controls are necessary for rooms in wings having different exposures and should certainly be used in special rooms such as the maternity wing or nurseries where higher temperatures are desirable than in other parts of the hospital. Air conditioning throughout is a desired luxury if at all possible, but it is imperative in surgical and operating rooms, not only as a protection from explosions but for its value in increasing the efficiency of the surgeon and staff in these departments. It is sometimes desirable in isolation rooms, but care must be taken not to re-circulate air from these rooms, although where bacteria destroying lights are used, this might be possible.

Plumbing throughout must be laid out with special care. Special fixtures must be provided where necessary. The use of china fixtures is most desirable, even for autopsy tables. Back siphonage must be eliminated by proper design and layout and by the use of siphonage breakers in floor drains in surgerics and nurseries. For super economy and savings in maintenance and trouble, non-corrosive pipe such as copper should be used for all hot water supply and return piping, as well as steam supply and returns. In all events the steam return line must be non-corrosive.

In kitchens electricity is preferred for cooking, not only as a saving in wear on utensils, but also to prevent shrinkage of food in cooking. Dishwashers should be provided with boosters to sterilize the dishes and make for instantaneous and automatic drying of dishes and silverware. In most hospitals it is preferable to prepare all the food in a central kitchen. The food is then placed on individual trays in heated carts and delivered to the different divisions. The method is usually considered better than delivering the food in bulk to the different floors, diet kitchens or pantries, as it provides a central control for checking diets and servings.

The question of vacuum cleaners, whether a central system or individual portable units, depends largely upon local conditions and the design of the hospital.

Proper communications, phones, nurses' and doctors' calls and patients' signals must be provided. A doctor "in and out" and paging system is desirable. If possible, provision should be made for telephone jacks for bedside telephones for patients. Radio outlets of the same sort are valuable and provide proper entertainment for the patients. A pneumatic tube delivery system is advisable between different departments, record rooms, nurses' stations, and administration.

The question of fire protection is largely one of proper construction and equipment. Sprinkler systems or carbon dioxide cannot be used in hospitals. The best protection is fireproof construction throughout, the use of metal furniture as far as possible and constant vigilance on the part of staff and personnel.

Elevators must be designed with their special use in mind. The cars must be large enough to take a regulation hospital bed with attendants. A collective automatic push button control with the possibility of using an operator at peak load periods is the ideal type of equipment. Automatic door operators are most desirable as they eliminate uncertainties and delays in operation. A stainless steel cab that will not mar or soil easily is desirable if cost permits. The corners of the cabs should be rounded. The elevator signals should be as soundless as possible to eliminate unnecessary noise. Separate elevators should be provided for food carts and other services as necessary.

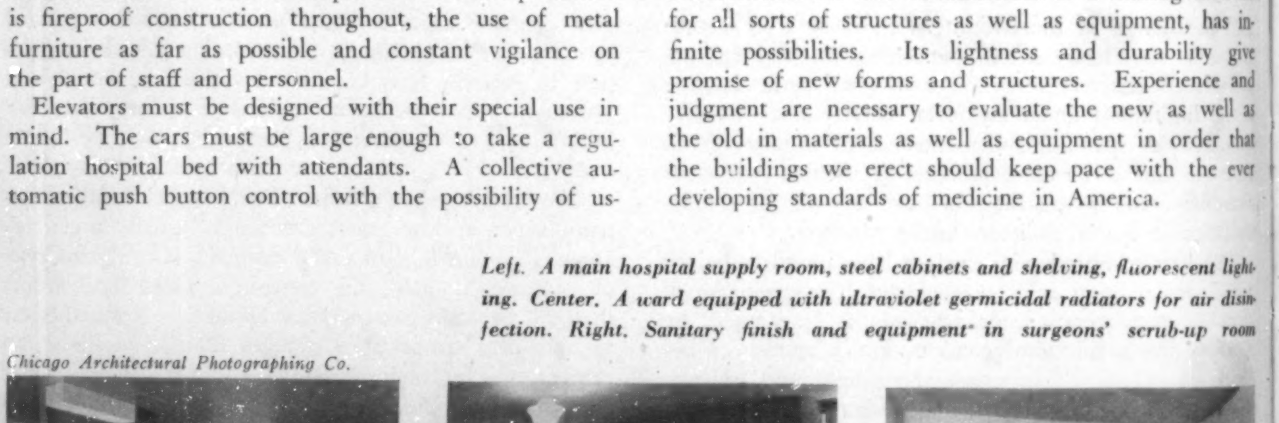
Clothes chutes should be provided, preferably glass lined with a flushing spray at the top and proper drain and trap at the bottom.

Sterilizers should be the non-boiling or pressure type. The present trend is to have a large central sterilizer room that can take care of all sterilizing except minor ones that may be necessary in various parts of the building. In small hospitals having no laundries of their own or where there is no need for high pressure steam in summer time, electric sterilizers should be used. Gas sterilizers should be avoided because of nuisance in operation and danger of explosions caused by the open flame where anesthetic gases are present.

The whole question of special hospital equipment is too large and too varied to go into in this article. The needs of the individual hospital must be studied for its own requirements, keeping in mind the standards mentioned in the early part of this article as to reliability, low operating and maintenance cost, the ease of replacement of parts, and above all, durability—in other words economy in operation, not the first cost.

In closing, it is worth recalling that a hospital is one of the greatest challenges to an architect. It is not possible in a brief article to go into detail as to all the special and varied needs. There are fields of new materials and methods as yet unexplored. As an example, research into the uses of aluminum as a coming material for all sorts of structures as well as equipment, has infinite possibilities. Its lightness and durability give promise of new forms and structures. Experience and judgment are necessary to evaluate the new as well as the old in materials as well as equipment in order that the buildings we erect should keep pace with the ever developing standards of medicine in America.

Chicago Architectural Photographing Co.



Left. A main hospital supply room, steel cabinets and shelving, fluorescent lighting. Center. A ward equipped with ultraviolet germicidal radiators for air disinfection. Right. Sanitary finish and equipment in surgeons' scrub-up room

REFRIGERATION AND AIR CONDITIONING

By Terry Mitchell, M. E.

TRADITIONALLY, refrigeration is necessary in the hospital for food preservation, freezing of food and ice, and cooling drinking water. Today and in the future refrigeration will play an increasing part in therapeutics (as well as in comfort) in connection with air conditioning for various purposes. In planning the postwar hospital the provisions for refrigeration should be considered at an early date. A brief review of some of the most pertinent factors may prove useful; therefore these notes.

Food Preservation. A large hospital may have as many as 30 walk-in refrigerators and cold boxes for food service. These will be proportioned and equipped for holding the following products between the temperatures (F.) indicated:

Fresh meats	32-34°	Dried fruits	34-40°
Frozen meats	5-15	Vegetables	36-40
Salt meats	36-40	Bakers box	34-38
Fish	24-26	Cereals	35-40
Dairy products	36-40	Diet kitchens	36-40
Cheese	34-40	Frozen desserts	10-15
Butter and eggs	28-32	Garde mange	36-38
Fresh fruits	38-40		

Either wall-and-ceiling coils or fan-type unit coolers are satisfactory for these spaces, if ample surface is provided to avoid drying-out of the foods.

Freezing. Low-temperature service in hospitals includes the usual freezing of ice cream and other desserts, the storage of frozen foods, and the freezing and storage of blood plasma. Ice cream freezers are usually arranged to operate either with direct-expansion ammonia under automatic control, or with cold brine as the refrigerant. A temperature of 5 to 8° is required. The hardening room should be held at 0° or lower.

Ice is both indispensable to food service and essential in nursing practice. Some hospitals install ice-making systems of surprisingly large capacity. An average 250- or 300-bed hospital makes 1½ to 2 tons of ice daily. Clear ice, obtained by means of air agitation, is of course most desirable. The ice storage room, kept at 27 or 28°, need not be large enough to hold the entire output: ice not immediately needed is left in the cans, which vary in size from 50 to 100 or even 300 lb. The freezing times for these cans, with 16° brine, are 11, 28, and 53 hours, respectively (using 5 by 12 in., 8 by 16 in., and 11 by 22 in. in section). Or, ice may be made in the form of cubes, flakes, or compressed snow.

Cold drinking water is most economically supplied from a central system. A small pump keeps the water, chilled from 40 to 45°, circulating past the fountains and pitcher outlets. From 1 to 1½ quarts per patient per hour should be provided; this takes care of the amounts used by the staff and visitors, that wasted, etc. As chilling tends to settle out any sediment in the water, the cooler should be of a type easily cleaned. Individual cooling units offer another solution of the drinking water problem.

Morgue refrigerators customarily hold from 4 to 12 trays and are maintained at 40°.

AIR CONDITIONING

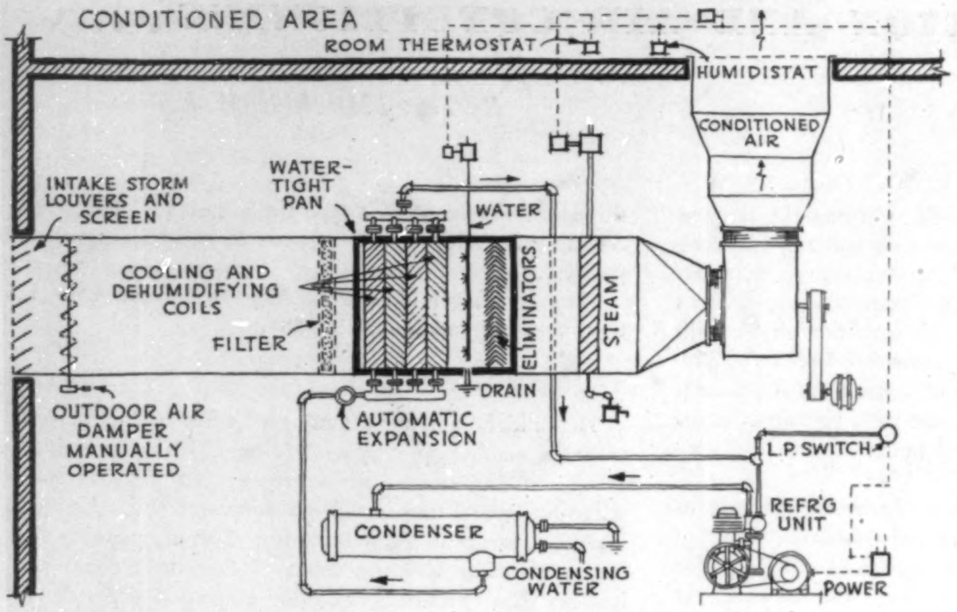
The initial equipment and installation cost of a central air conditioning system (from $125 per bed in wards, to $500 for a private room) has kept air conditioning from being installed throughout entire hospital buildings, except in a few instances. Cost of operating the air conditioning may run about 75 cents to a dollar per bed per day. However, its value in certain departments has proved to be far greater than its cost.

Nurseries. Most remarkable results have been shown by controlling the air in nurseries for premature infants. Excluding hopeless cases and those dying within 48 hours, mortality was greatly reduced by holding the relative humidity (r.h.) close to 65 per cent, and the temperature at 77°. Maximum gain in weight and health were also noted at high humidities. Unusually weak infants are put in electrically heated incubators in the conditioned nursery, where they breathe cooled, moist air. Modern practice calls for all babies to be "cribbed" in an air conditioned room. A high ventilation rate is advisable, provided no drafts are created.

Operating Rooms. In operating rooms high temperatures and humidities are favorable to the patient and are desirable in minimizing the static electricity which occasionally causes explosions of anesthetics mixed with air. Conditions of 75° dry bulb and 60 per cent r.h., or up to 85° dry bulb and 50 per cent r.h. in hot climates, have been adopted as a compromise, to permit the surgeon and his staff to work efficiently. To avoid electric sparks, the operating table, apparatus, rubber sheeting, peoples' shoes, and the floor are also preferably grounded. The humidity should be frequently checked.

All-fresh air is supplied to the room in sufficient quantities to give from 8 to 15 complete changes per hour. This is necessary to carry downward the anesthetic fumes, to overcome the heat from sunlight, lamps, sterilizers and personnel, and to prepare for emergency operations quickly. Yet no drafts should be felt. Careful filtering, and perhaps sterilization of the incoming air with ultra-violet lamps, will aid in reducing infections. Double windows, the insulation of sterilizers, and forced ventilation of adjoining sterilizing rooms should also be considered.

Other Rooms. Where possible, a small ward near by should be air conditioned to protect patients from the prostration which often follows an operation. Some authorities say a low relative humidity (25 to 35 per cent) is advisable for recovery rooms. Others believe that recovery rooms and wards should be at the same tem-



Schematic Diagram of a typical air conditioning system showing the relationship of the essential parts of the equipment, and the air flow with the controls

perature and humidity as the operating room. While no recirculation of the air is permissible in operating rooms, it is allowable in wards or private rooms, provided the air does not mix with that from other rooms. The spread of infections, odors, and noises to other parts of the hospital is thus prevented.

Oxygen rooms require average cooling to 72°, with 35 per cent r.h., to relieve strain on the heart of the patient. Oxygen therapy is least effective in the high temperatures and humidities encountered in an uncooled tent. Tents cooled with ice melt an average of 10 lb. per hr. Little if any fresh air need be admitted to an oxygen room: the walls are sealed and trap doors or curtains are used to maintain the high oxygen content (50 per cent).

Wards for hay fever, asthma and similarly allergic patients are cooled to 76° and 30 per cent r.h. These conditions, combined with the most careful filtering of the air that can be afforded, prevent irritation of eyes and membranes, stop discharges, and reduce nervousness and inability to sleep. While not all cases are cured by air conditioning, from one half to three fourths of the patients are given relief. It is especially appreciated by those who have not been desensitized successfully by injections, and by serious asthma cases.

Air practically saturated with moisture and heated to 106 or 107° is proposed for hospital procedure in creating high artificial fevers. Present practice sometimes employs fairly dry air at 130 to 150°, with the possible danger of skin drying and burns.

STORAGE OF BIOLOGICALS

Vaccines and serums are preferably stored in small refrigerators in the pharmacy, and in others near the points of use. The temperatures usually wanted vary from 24 to 40°, and must be unfailingly maintained. Penicillin has to be kept at 50° F. (10° C.) or lower: either moisture or warmth will kill its effectiveness. Temperatures as low as minus 75° F. are being used, in conjunction with vacuums down to 1/30,000 of an atmosphere, for freezing the moisture from penicillin during manufacture. The moisture sublimes from the drug while in the frozen state.

Blood plasma is similarly dried under a vacuum while frozen: less than 1 per cent of moisture remains when the temperature in the vapor condenser is kept at —22°. Or, plasma can be simply frozen in cabinets held at —6°, and be stored at —4°. Freezing takes 6 hours. Dr. Strumia of the Bryn Mawr Hospital writes that almost every hospital should be equipped to freeze and store plasma. A few larger hospitals could dry the plasma from the frozen state. Insulin and many other pharmaceuticals are also prepared and kept with the aid of refrigeration. These biologicals, as is well known, are opening a new era in medicine.

REFRIGERATING EQUIPMENT

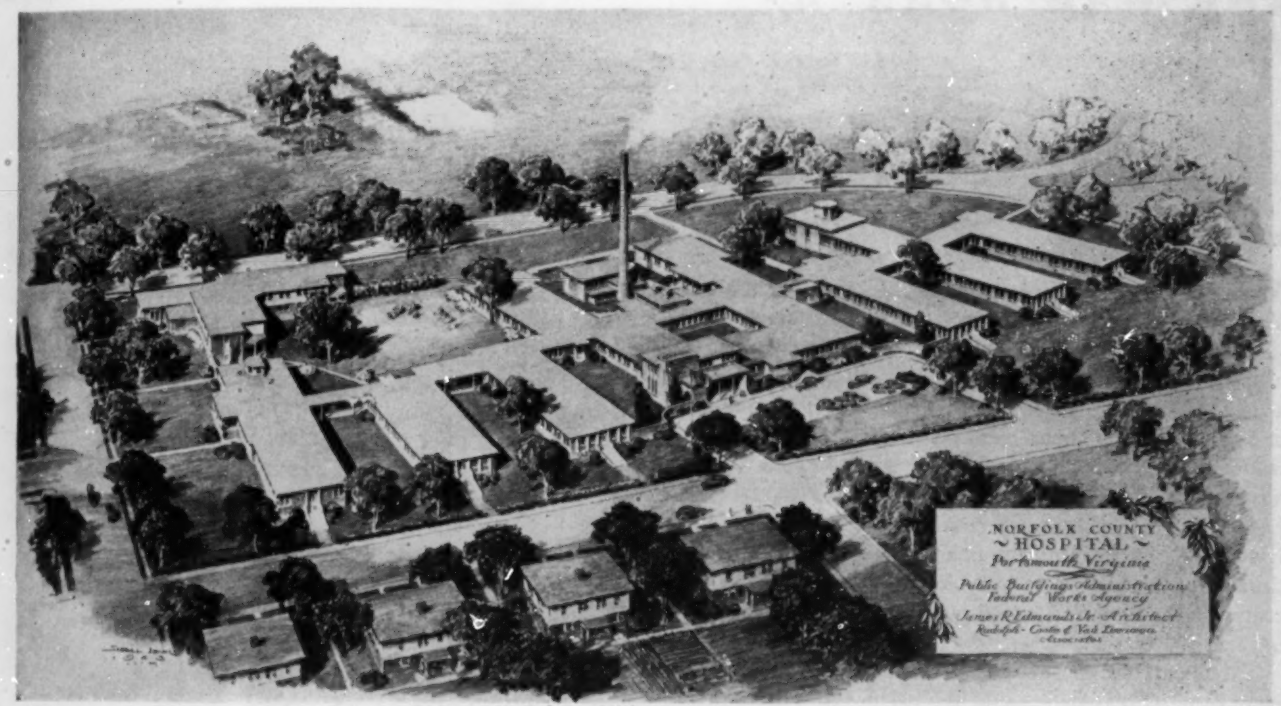
One ton of refrigeration is equal to the cooling effect obtained by melting one ton of ice in 24 hours. (2000 lb. of ice × 144 Btu absorbed per lb. = 288,000 Btu = one ton refrigeration.) This is cooling at the rate of 12,000 Btu per hour. Compressors, condensers, and coolers are always rated on the basis of continuous, 24-hour operation. A 10-ton system will not handle a load of 10 × 288,000 Btu in eight hours, unless "cold" can be stored up in a brine or ice tank by running the machine day and night. And remember that it takes about 1.6 ton of refrigeration to freeze 1 ton of ice.

The capacity of the compressor depends on the suction and discharge pressures, as well as upon its size, number of cylinders, efficiency, speed, and hours of operation. Ample surfaces in coolers and condensers are necessary to keep the suction pressure up and the "head" pressure down. A machine working at 25 lb. suction (gage) will have twice as much refrigerating capacity as at 5 lb., other things being equal. The actual capacity of the plant can seldom be measured after it is installed: hence the importance of well made equipment and the necessity of avoiding "short cuts" to cheapen first cost.

(Continued on page 116)

HOSPITALS THAT MEET THE EMERGENCY

The hospitals shown on the following pages are built under the Lanham Act to meet the needs of war-congested communities. They were designed by private architects in collaboration with the Hospital Facilities Secton, U. S. Public Health Service, Marshall Shaffer, Chief Architect, and the Emergency Operations Section of the Public Buildings Administration, Peter L. Hein, Engineer Advisor-in-charge. All plans were based on types developed by the U. S. Public Health Service, and incorporate many of the standards established by the Service.


NORFOLK COUNTY
~ HOSPITAL ~
Portsmouth Virginia
Public Buildings Administration
Federal Works Agency
James R Edmunds Jr Architect
Rudolph - Cook & Van Leeuwen
Associates

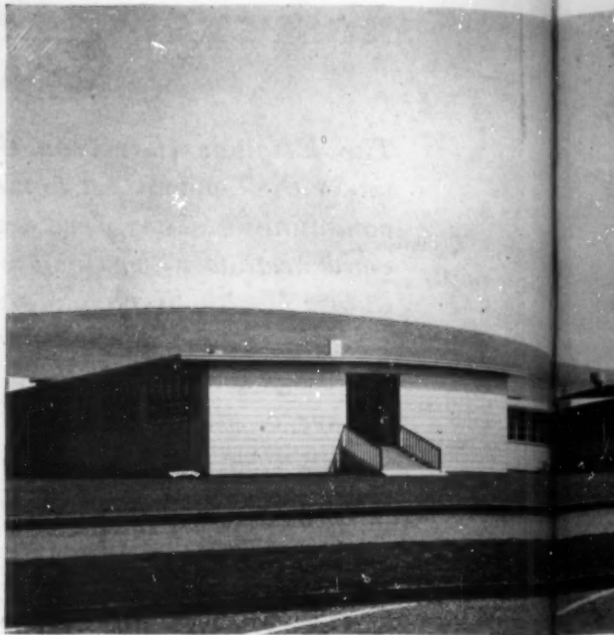
NORFOLK COUNTY HOSPITAL, PORTSMOUTH, VIRGINIA

James R. Edmunds, Architect; Rudolph, Cook and Van Leeuwen, Inc., Associates

Limited to one story by wartime restrictions of steel, this 150-bed acute general hospital was constructed with Lanham Act funds at a cost of $850,000.

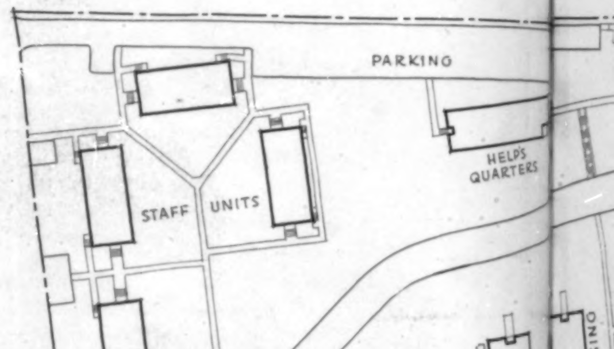
The administration, outpatient department, adjunct diagnostic and service facilities are centrally located with ward wings on both sides. The six ward wings have a normal capacity of 25 beds each, and are oriented to the south, permitting all bedrooms to have sunlight during part of the day.

Construction included the use of concrete footings for foundations; exterior walls of face brick; wood framing for floors and roof, except in the laundry, kitchen, and service areas where reinforced concrete was used.



COMMUNITY HOSPITAL FOR WAR WORKERS

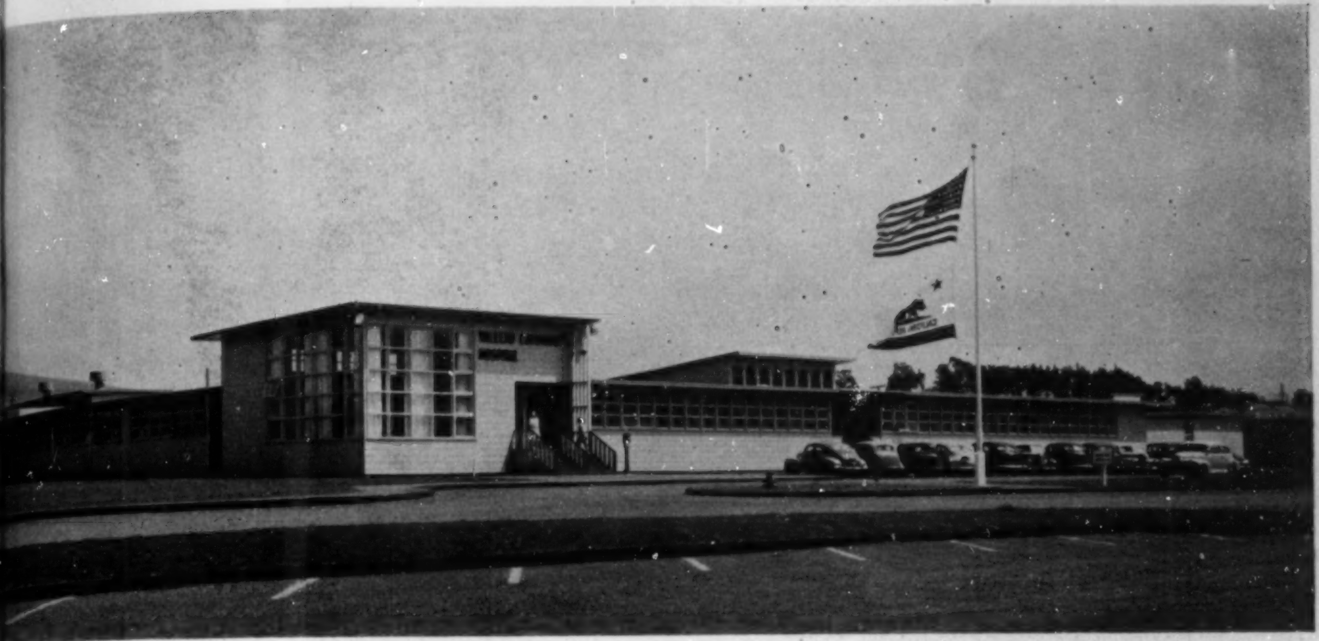
Vallejo Community Hospital • Douglas Dacre Stone and Lou B. Mulloy, Architects



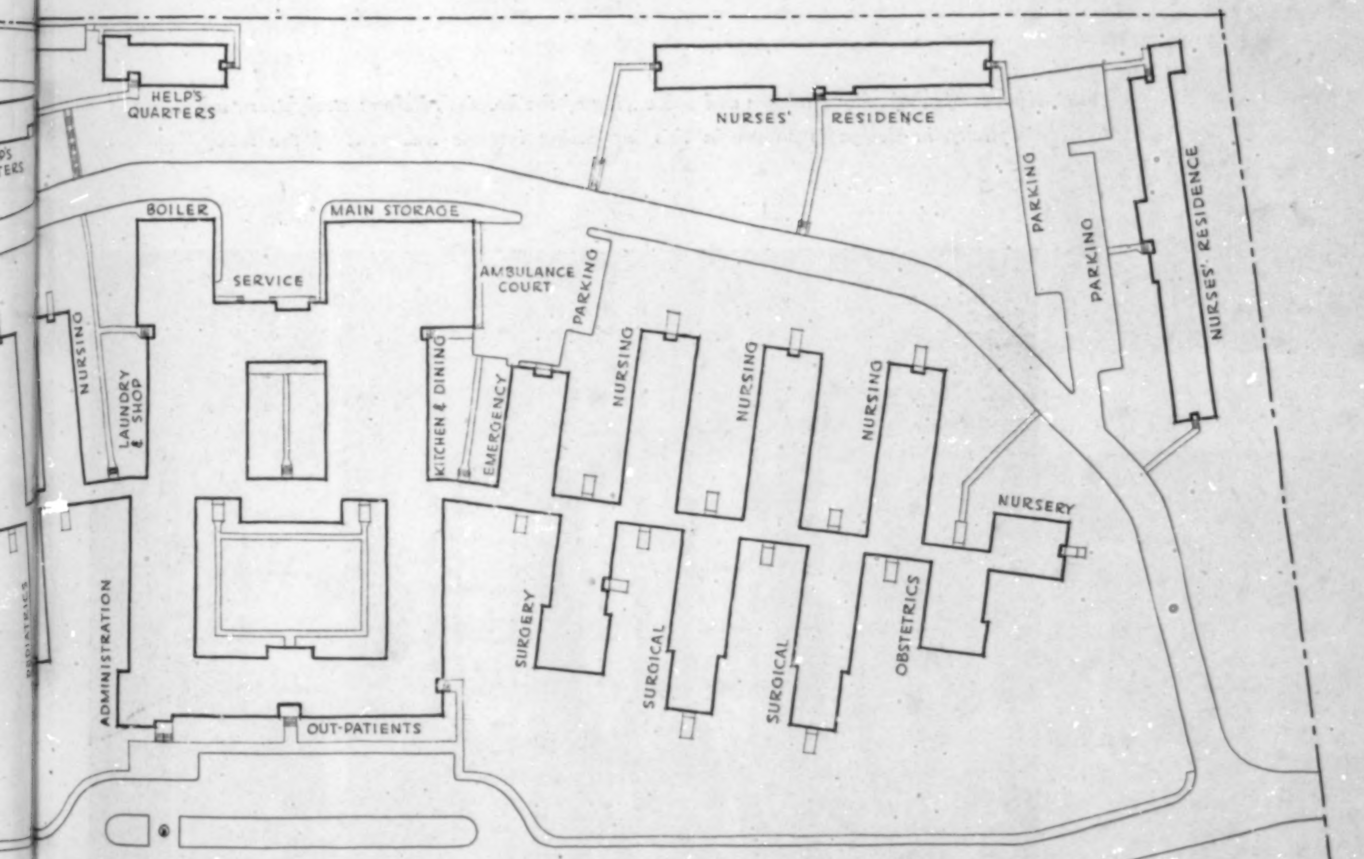
When as a result of the activities at the Mare Island Navy Yard, the population of Vallejo, California, became four times its normal size of 25,000 in less than two years, hospital conditions in the community became seriously acute. In order to meet this need in the very minimum of time, and in order to permit a maximum of standardization, a four-foot module became the backbone of the hospital design. The Vallejo Community Hospital was erected under the Lanham Act at a cost of $1,325,000, and is 100 per cent government financed. The buildings are situated on a twenty-acre tract about three miles from the center of the city, and on one of the main arterials leading north.

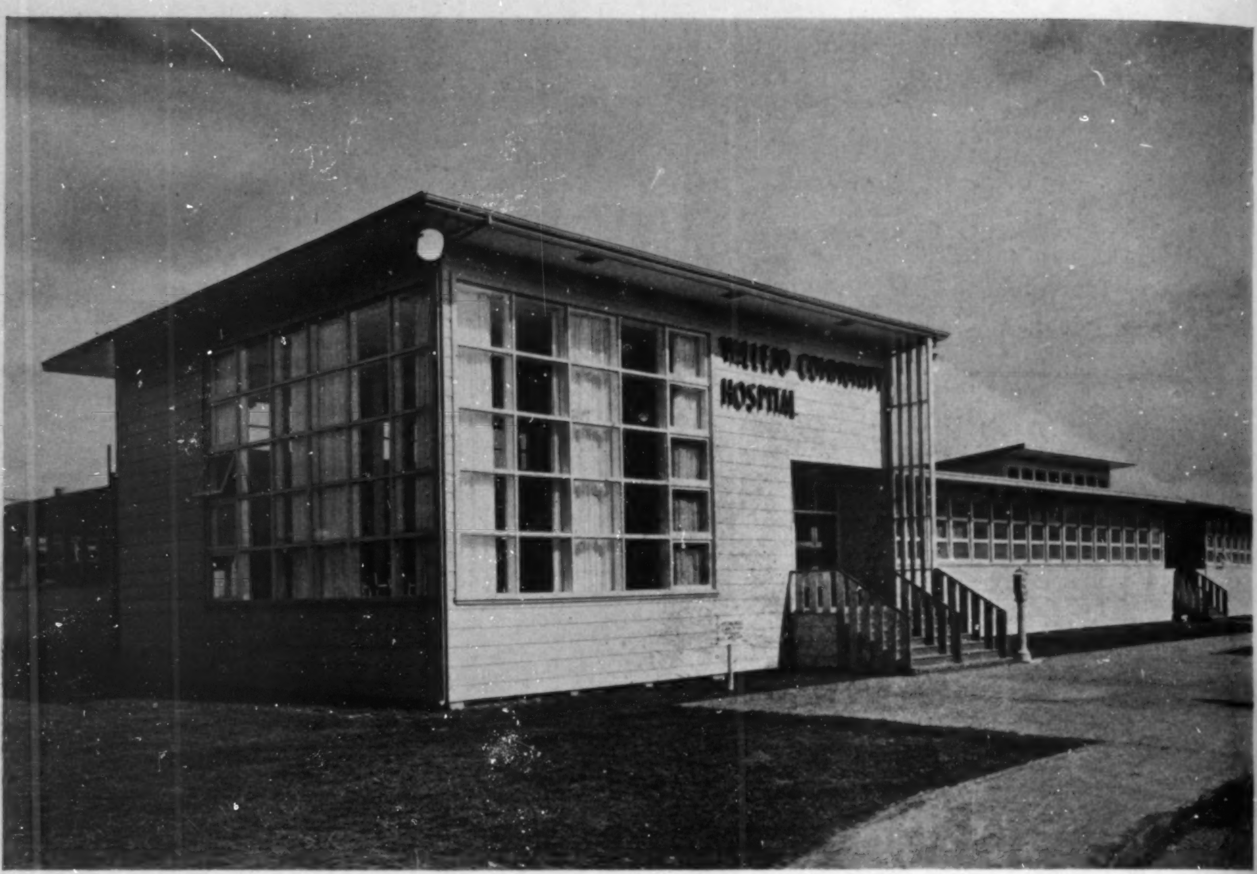
The institution has 256 beds available to the public, there being two 16-bed wards; the balance in 4-bed wards, 2-bed wards and single rooms. Facilities include those usually found in a hospital of this size, but there are special provisions for maternity, pediatrics, and psychiatric cases, and an isolation section for communicable diseases. An out-patient section includes dentistry, pharmacy, social service, examining units and treatment rooms so arranged as to be entirely separate from the main corridor of the hospital, but likewise accessible so that both hospital and out-patient services may use these facilities. There is also a home for nurses on the grounds and living quarters for principal staff members have been provided.

The four-foot module used for the building proved to be both economically beneficial and a good time saver. The case work was also designed in four-foot modules so that stock units could be used and fitted into any section of the building. The exterior of the building is redwood siding over studs; interior walls and partitions are gypsum plaster board, and ceilings are fiberboard. The continuous fenestration is used almost entirely, giving the maximum of light and air.

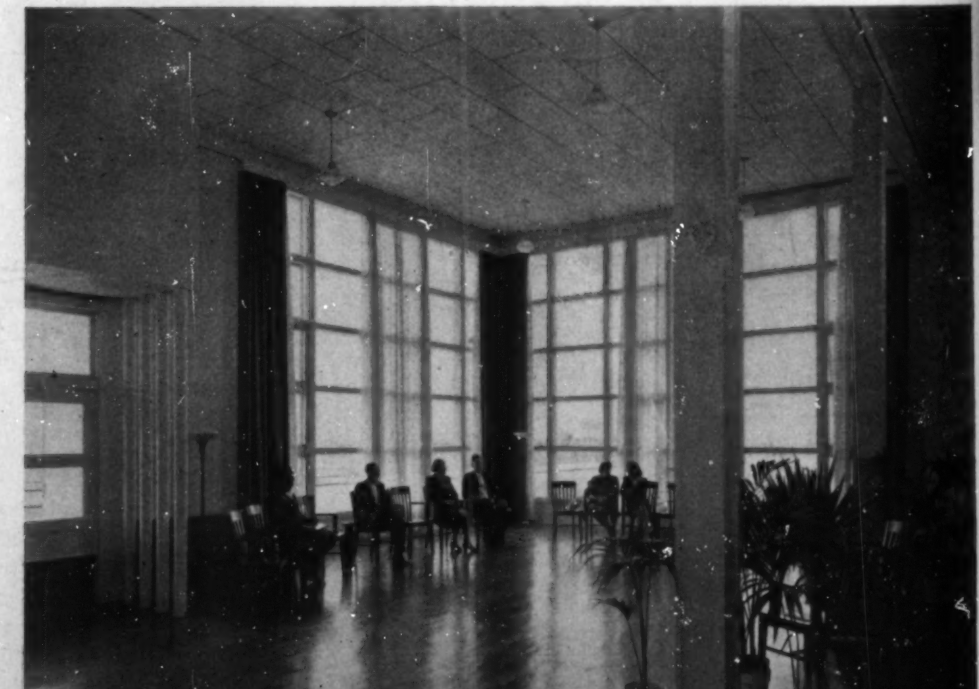


A general view of the hospital looking southeast showing the pediatric wing, the administration wing, main lobby, offices, examination rooms, and the parking space. Below is the diagrammatic plan of the building


HELP'S QUARTERS
NURSES' RESIDENCE
PARKING
PARKING
NURSES' RESIDENCE
BOILER
MAIN STORAGE
SERVICE
AMBULANCE COURT
PARKING
NURSING
LAUNDRY & SHOP
KITCHEN & DINING
EMERGENCY
NURSING
NURSING
NURSING
NURSERY
ADMINISTRATION
SURGERY
SURGICAL
SURGICAL
OBSTETRICS
OUT-PATIENTS
PARKING
N
PARKING
0 50 100 200

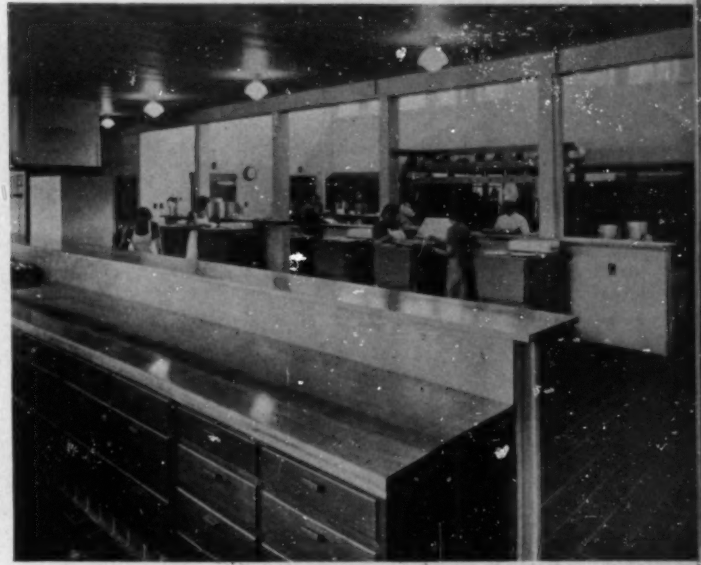

VALLEJO COMMUNITY
HOSPITAL

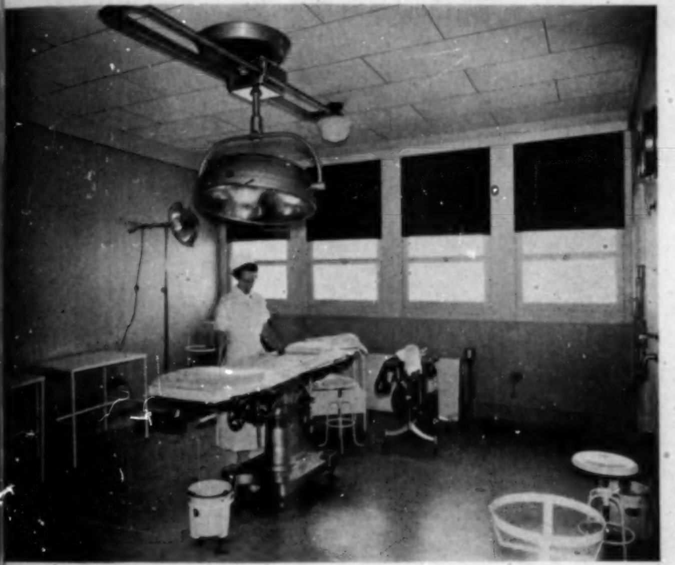
Above: view of main entrance and office wing of the hospital. Below: straightforward simplicity in design is shown in this interesting interior treatment of the lobby

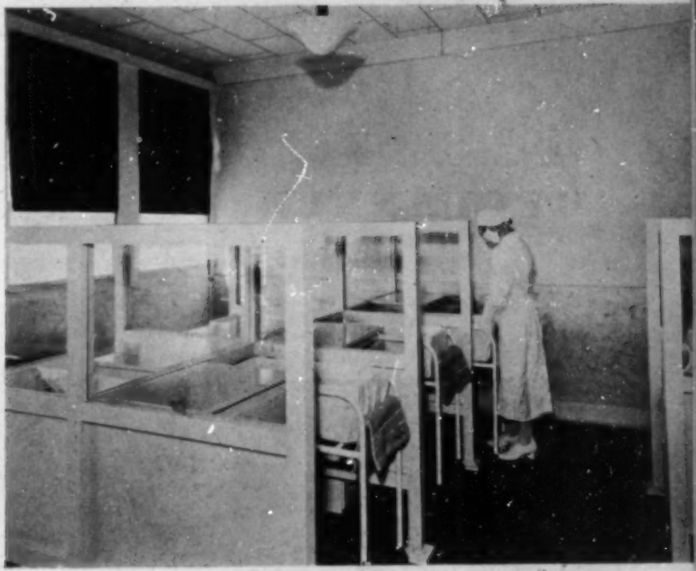


Gabriel Moulin photos

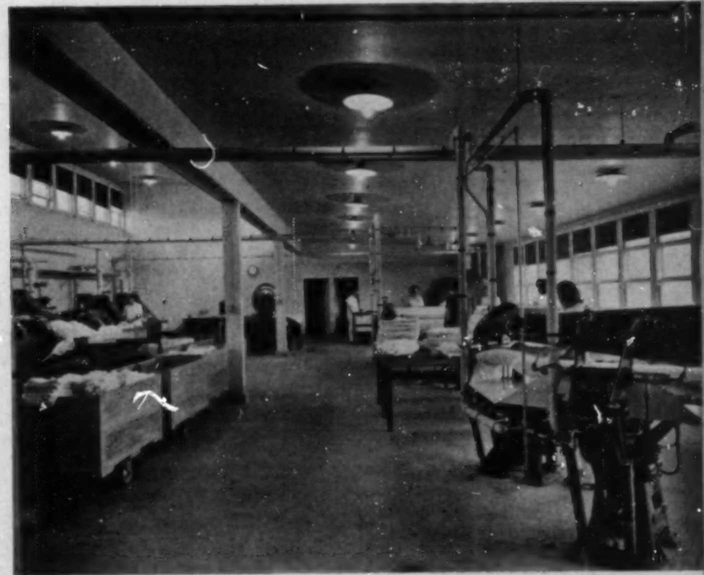
Right: the main kitchen; note the counter for tray service, and the wide aisle which keeps congestion to a minimum. Below: an operating room showing the adjustable lighting fixtures. The windows are typical throughout building

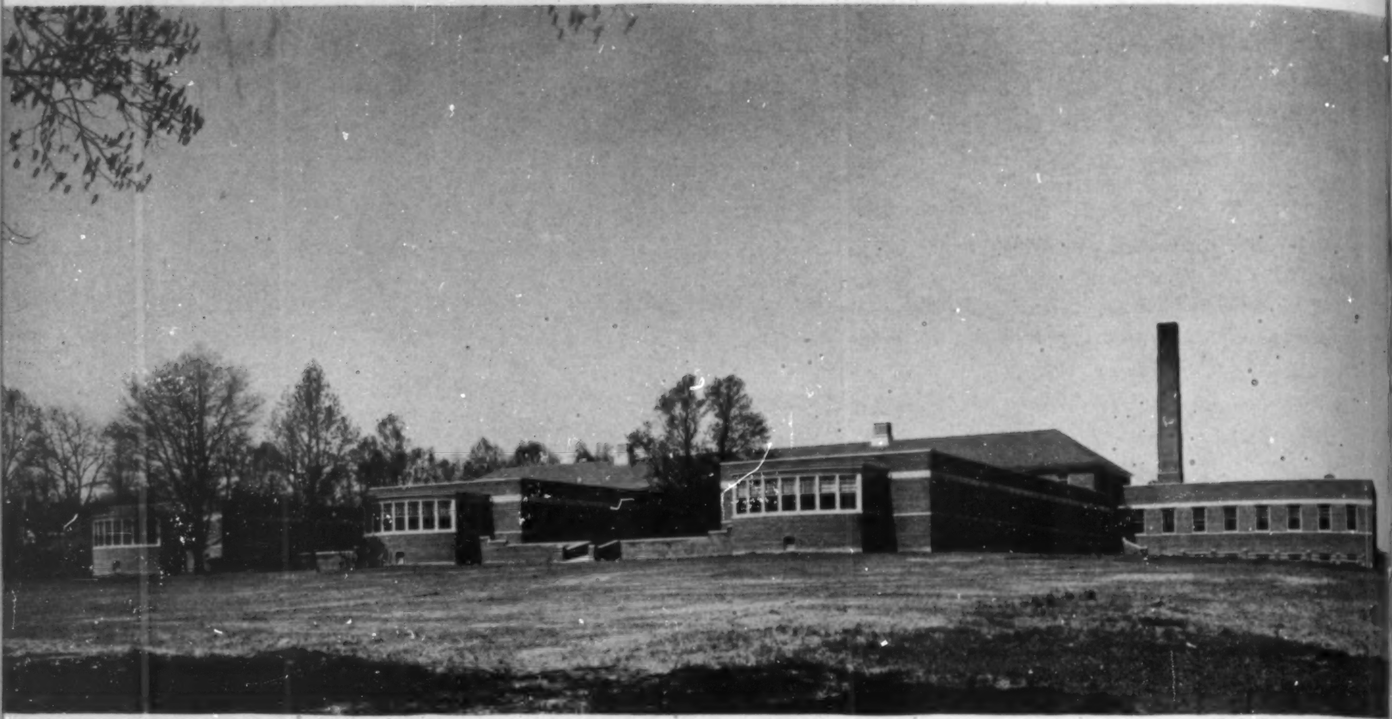






Right center: the nursery is equipped with cubicles made of shatter proof glass and plywood. At the bottom is a general view of the laundry. Note large windows near the ironers, and monitor type over the washing machine area





Leet Bros. photos

REPLANNED FOR WARTIME CONSTRUCTION

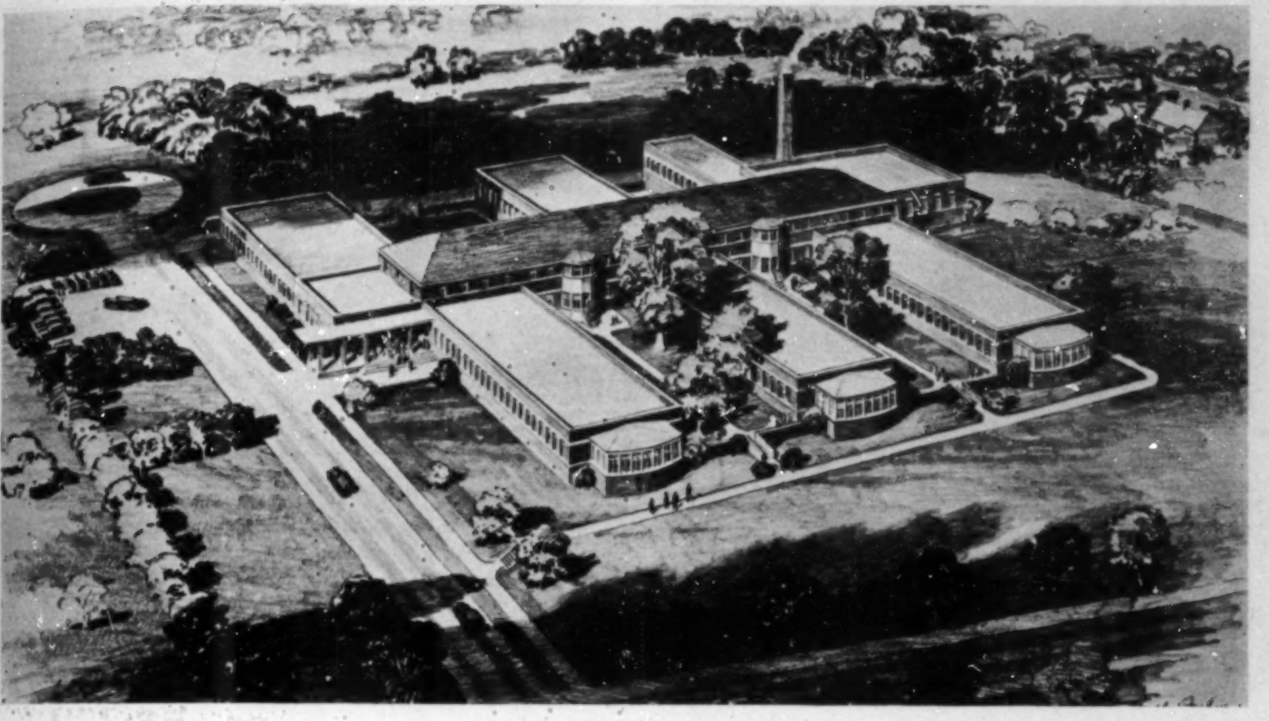
Arlington Hospital, Arlington, Va.

Buckler & Fenhagen, Architects

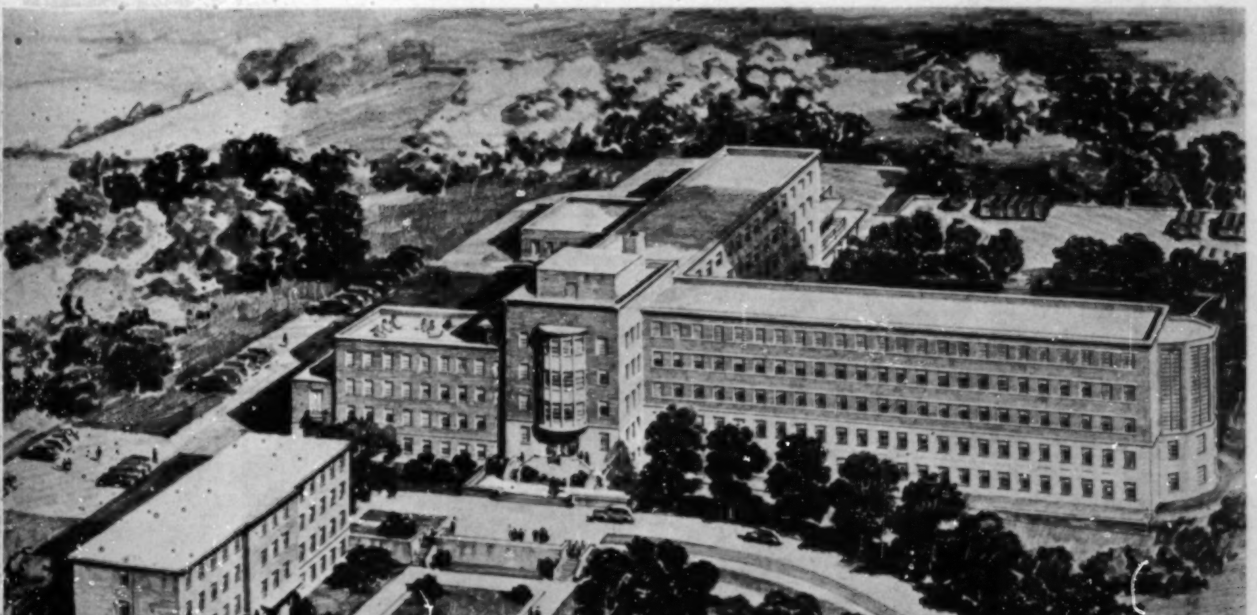
Charles F. Neergaard, Consultant

Expansion of the government offices had already created a need for additional hospital facilities in the whole region around Washington, D. C., and early in 1941 plans were ready for a new hospital. When war came the need was even more acute; nevertheless planning had to begin over again, for now there was a materials shortage. Accordingly, the five-story scheme shown in the rendering opposite had to be scrapped in favor of the single-story building in the photographs, with some reduction in the number of beds.

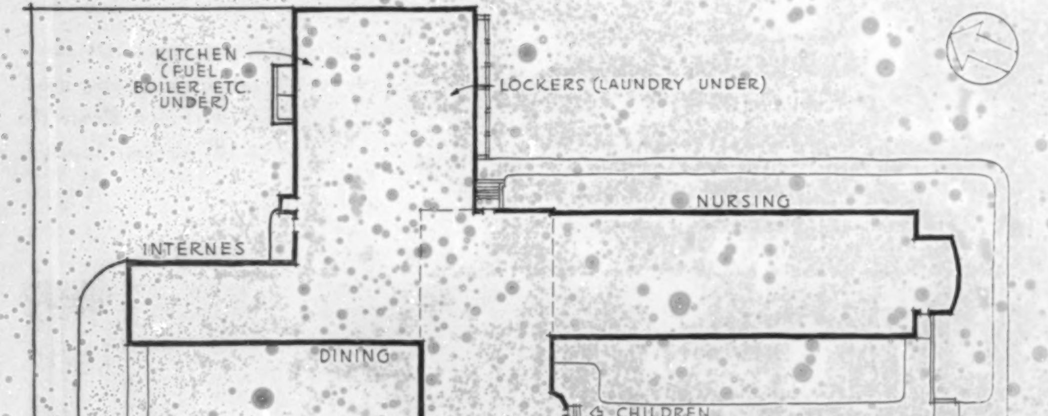
The constructed building has a capacity of approximately 120 beds in three nursing units. The grouping of various departments works out logically in the six wings: administrative offices and out-patients' department in one rear wing; operating and delivery suite in the central rear wing; dining rooms, kitchens, etc. in the third. The central section takes such facilities as accident, X-ray, sterilizing, staff room, library, children's ward.

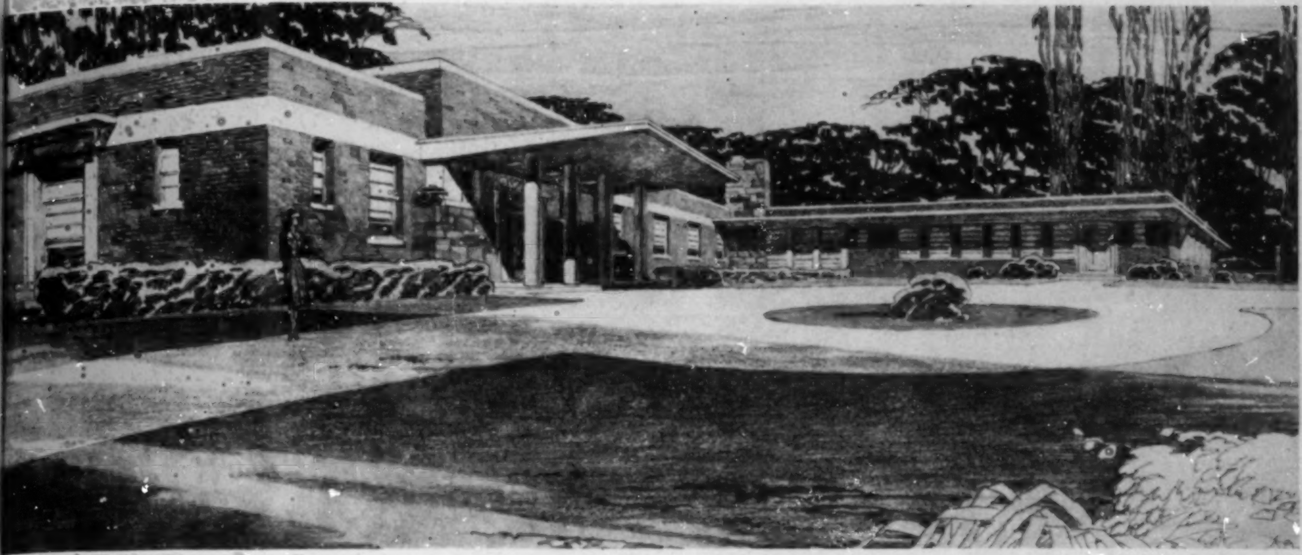


What the war did to hospital planning is well illustrated in the renderings above and below. The lower one shows a design done early in 1941 to meet a growing need. When war struck, the need was still there but the materials were not. Hence the new scheme, above, follows the dispersed wing plan of many war-time hopsitals



Left: view into one of the courts at the front (right in plan below). Right: view of nurses' station. Below: diagrammatic plan showing the logical disposition of the several departments in different pavilions. Central section houses accident operating rooms, X-ray, sterilizing, staff room, library, and children's ward. The second floor (dotted lines) provides for 50 nurses


KITCHEN (FUEL BOILER, ETC. UNDER)
LOCKERS (LAUNDRY UNDER)
NURSING
INTERNES
DINING
CHILDREN
OPERATING
NURSING
2ND FL.
DELIVERY
LIBRARY & CONFERENCE
STAFF AND AMBULANCE ENTRANCE
NURSING
EMERGENCY OPERATING
NURSING
MAIN ENTRANCE
NOTE: ENTIRE 2ND FL. NURSES' QUARTERS
OUT-PATIENTS & ADMINISTRATION
0
25
50
100



100-BED HOSPITAL
A SUBURBAN PLAN

Hospital for Prince Georges County, Md.

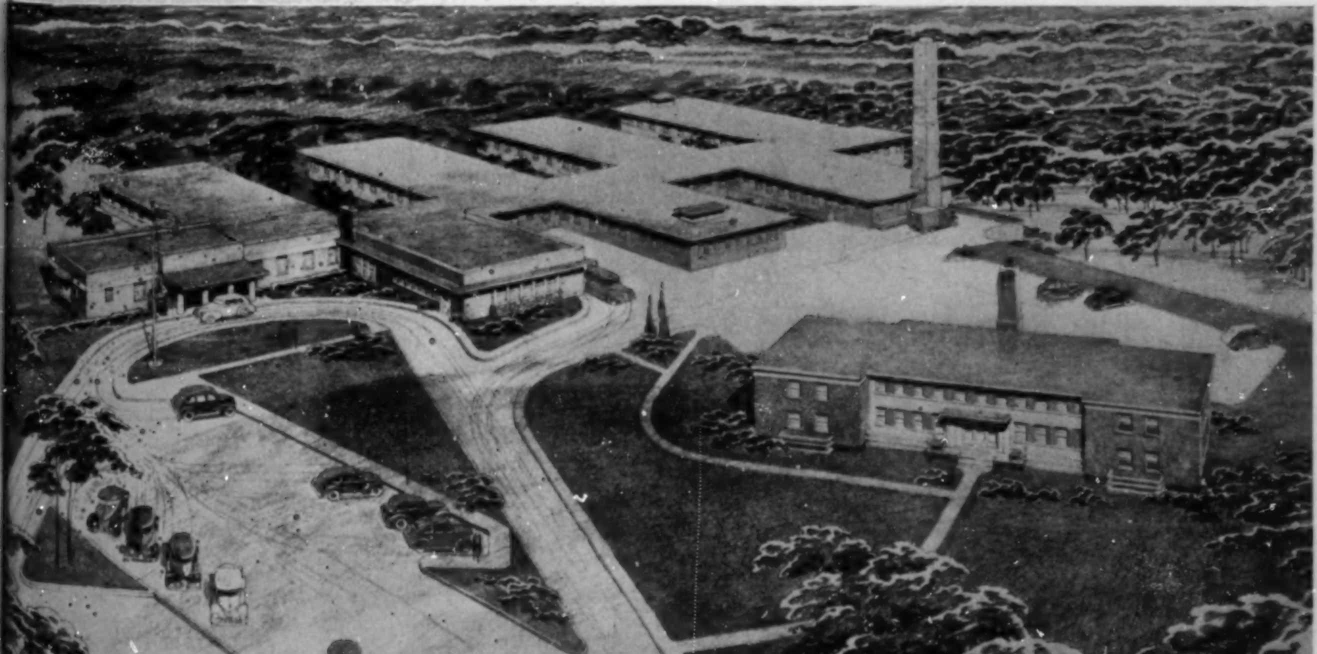
Kea, Ross & Walton, Architects

Charles F. Neergaard, Consultant

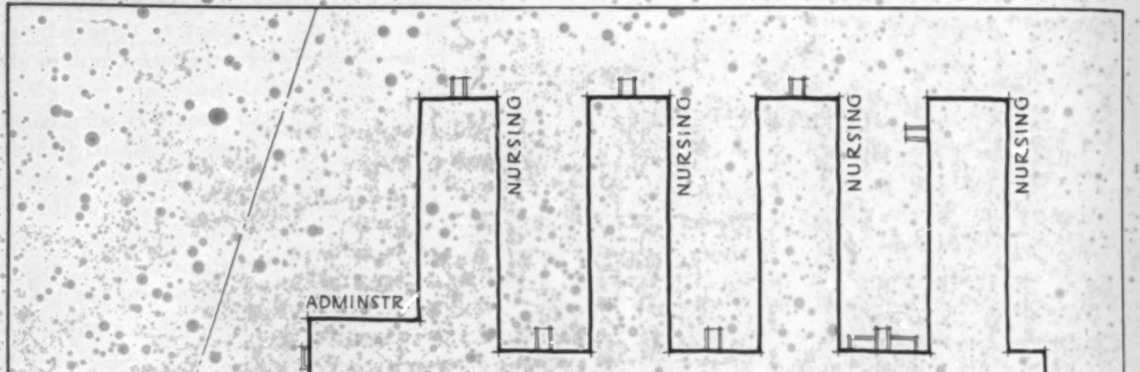
Another general hospital rushed forward to meet the impact of the war on the whole Washington area (see also page 104) is this United States Public Health Service project in suburban Cheverley. The program included three new hospitals and some additions to three others, all more or less coordinated both to the need and to the dictates of wartime design and construction.

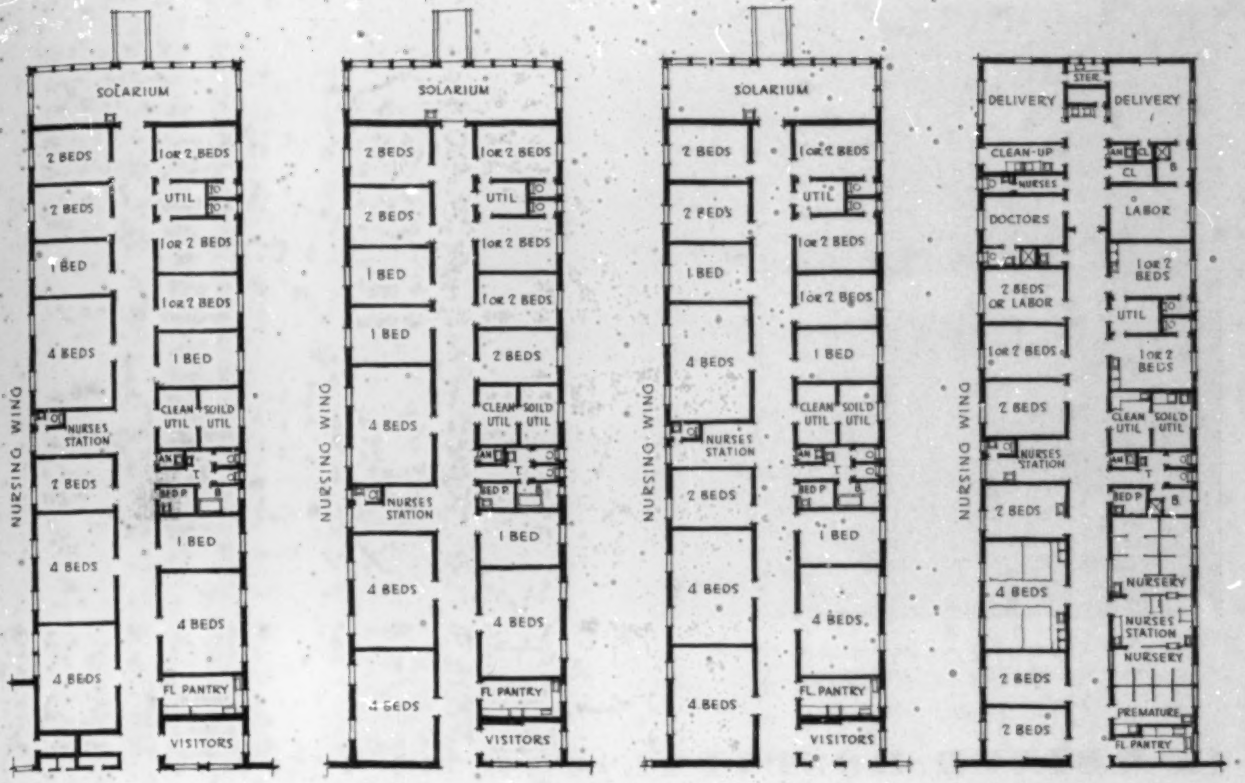
This one in particular shows its suburban character not only in following the characteristic pavilion-type plan, but also in the special requirements for nurses' quarters and for parking space. The nurses' home, in this case a separate building, provides rooms for 50 nurses.

Like the others built in the war emergency program, this hospital is complete with respect to facilities, the materials shortages being a limiting factor more in plan and construction features than in equipment. It has complete operating rooms, X-ray laboratories, solariums, kitchens, cafe-



The familiar pavilion-type plan used for so many war-built hospitals here fits nicely into a suburban location near Washington, D. C., with plenty of space for light and air, and for parking


NURSING
NURSING
NURSING
NURSING
ADMINSTR
OUT-PATIENTS
OPERATING
SERVICE
PARKING
PARKING
PARKING
PARKING
NURSES HOME
0
50
100
200

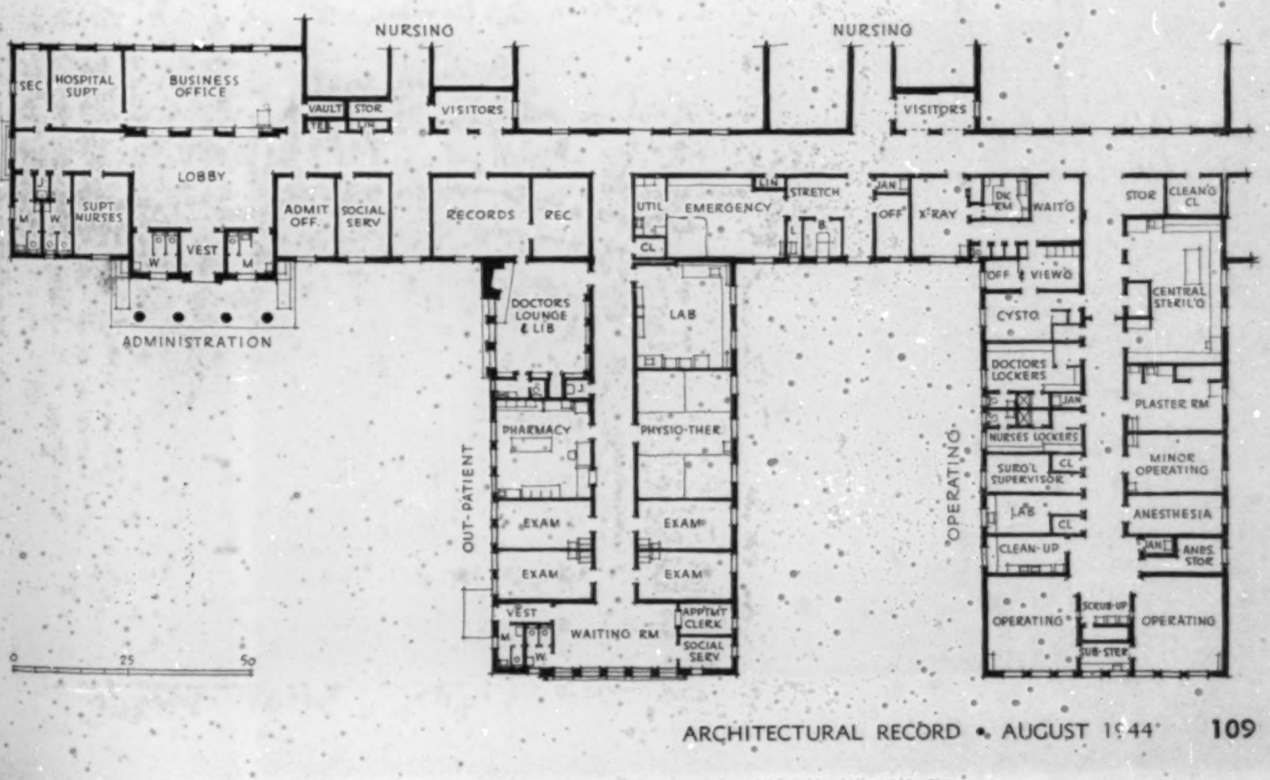

SOLARIUM
2 BEDS
1 OR 2 BEDS
2 BEDS
UTIL
1 OR 2 BEDS
1 BED
1 OR 2 BEDS
4 BEDS
1 BED
CLEAN UTIL
SOIL'D UTIL
NURSES STATION
JAN
T
2 BEDS
BED P
B
4 BEDS
1 BED
4 BEDS
4 BEDS
FL PANTRY
VISITORS
NURSING WING
SOLARIUM
2 BEDS
1 OR 2 BEDS
UTIL
2 BEDS
1 OR 2 BEDS
1 BED
1 OR 2 BEDS
1 BED
2 BEDS
4 BEDS
CLEAN UTIL
SOIL'D UTIL
NURSES STATION
BED P
1 BED
4 BEDS
4 BEDS
4 BEDS
FL PANTRY
VISITORS
NURSING WING
SOLARIUM
2 BEDS
1 OR 2 BEDS
UTIL
2 BEDS
1 OR 2 BEDS
1 BED
1 OR 2 BEDS
4 BEDS
1 BED
CLEAN UTIL
SOIL'D UTIL
NURSES STATION
2 BEDS
BED P
1 BED
4 BEDS
4 BEDS
4 BEDS
FL. PANTRY
VISITORS
NURSING WING
STER
DELIVERY
DELIVERY
CLEAN-UP
JAN
CL
NURSES
CL
DOCTORS
LABOR
1 OR 2 BEDS
2 BEDS OR LABOR
UTIL
1 OR 2 BEDS
1 OR 2 BEDS
2 BEDS
CLEAN UTIL
SOIL'D UTIL
NURSES STATION
2 BEDS
BED P
B
NURSERY
4 BEDS
NURSES STATION
NURSERY
2 BEDS
PREMATURE
2 BEDS
FL PANTRY
NURSING WING

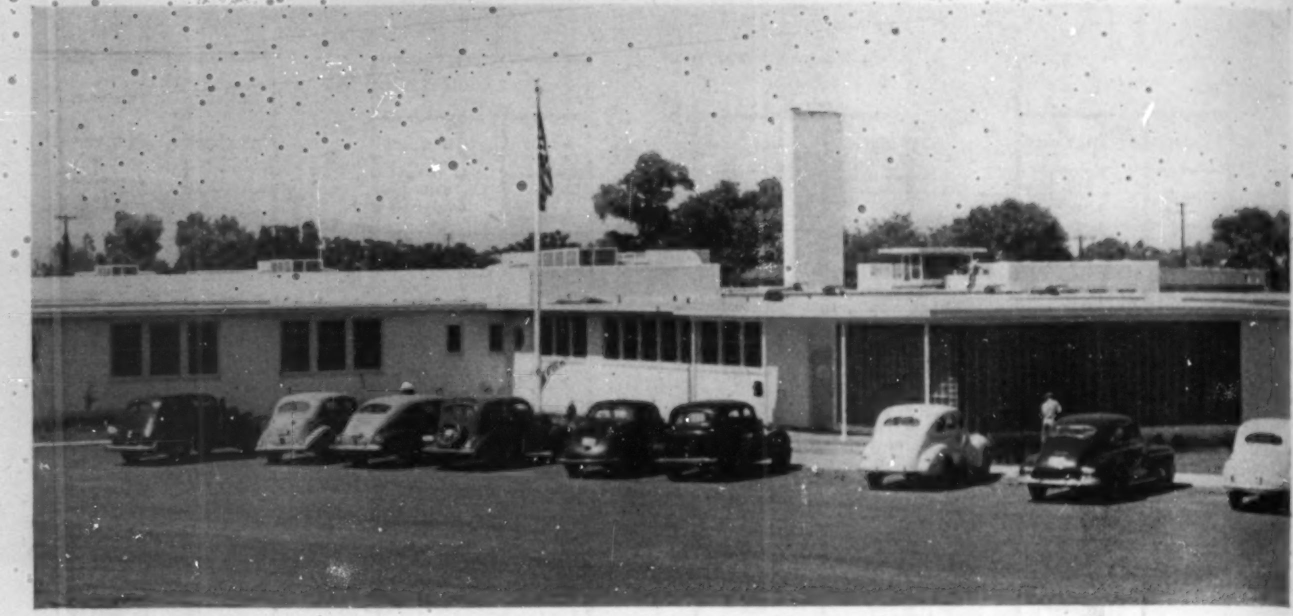
Plans of the four nursing wings at Prince Georges Hospital; delivery rooms and nursery in right-hand wing

teria. As in the others, however, the war did limit its size; the overall program as originally contemplated after studies of Washington's expanding population had to be cut almost in half.

The hospital was completed late in 1943 at a cost of $67,250, plus an allotment of $41,000 for equipment. Its capacity is 100 beds.

Plan of administration wing, out-patient's department and operating wing; service wing adjoins at the right


NURSING
NURSING
SEC
HOSPITAL SUPT
BUSINESS OFFICE
VAULT
STOR
VISITORS
VISITORS
LOBBY
M
W
SUPT NURSES
W
VEST
M
ADMIT OFF.
SOCIAL SERV
RECORDS
REC
UTIL
CL
EMERGENCY
LIN
STRETCH
JAN
OFF
X-RAY
DK RM
WAIT'G
STOR
CLEAN'G CL
ADMINISTRATION
DOCTORS LOUNGE & LIB
LAB
OFF
VIEW'G
CYSTO
CENTRAL STERIL'G
DOCTORS LOCKERS
JAN
PLASTER RM
PHARMACY
PHYSIO-THER
NURSES LOCKERS
MINOR OPERATING
SURG'L SUPERVISOR
CL
LAB
CL
ANESTHESIA
OUT-PATIENT
EXAM
EXAM
OPERATING
CLEAN-UP
JAN
ANES. STOR
EXAM
EXAM
VEST
M
W
WAITING RM
APPT'MT CLERK
SOCIAL SERV
SCRUB-UP
OPERATING
OPERATING
SUB-STER
0
25
50



COMBINED HOSPITAL AND HEALTH CENTER

St. Monica's Hospital and Health Center,

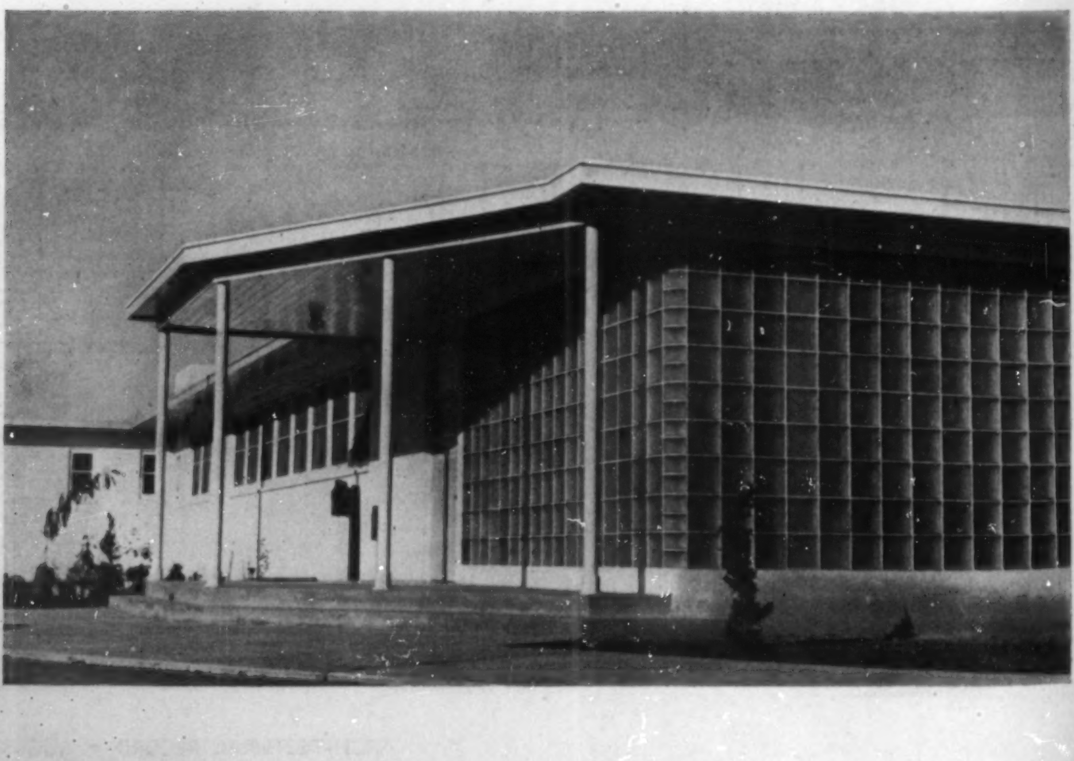
Phoenix, Ariz.

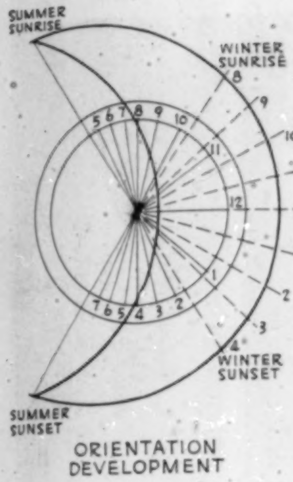
Lescher and Mahoney

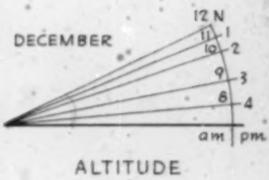
Architects and Engineers

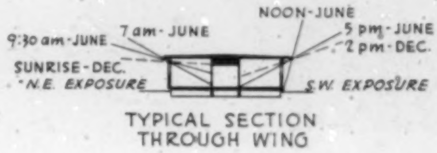
Conceived as a "south of the tracks" hospital and health center combined, this project was planned specifically for low-income people, to supplement two fine private hospitals in Phoenix. This fact is not to be taken as implying minimum standards, but rather as explaining certain features of the plan, particularly the health center facilities that have been provided.

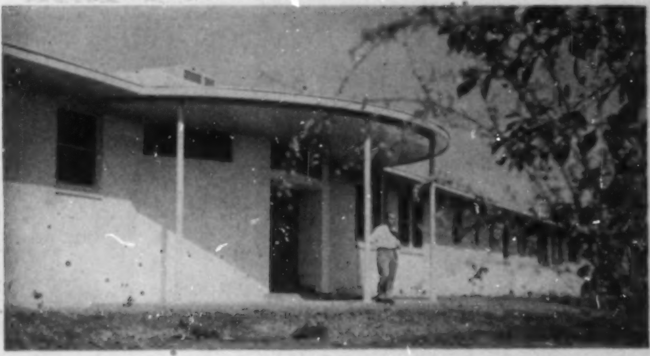
The project grew largely from the humanitarian



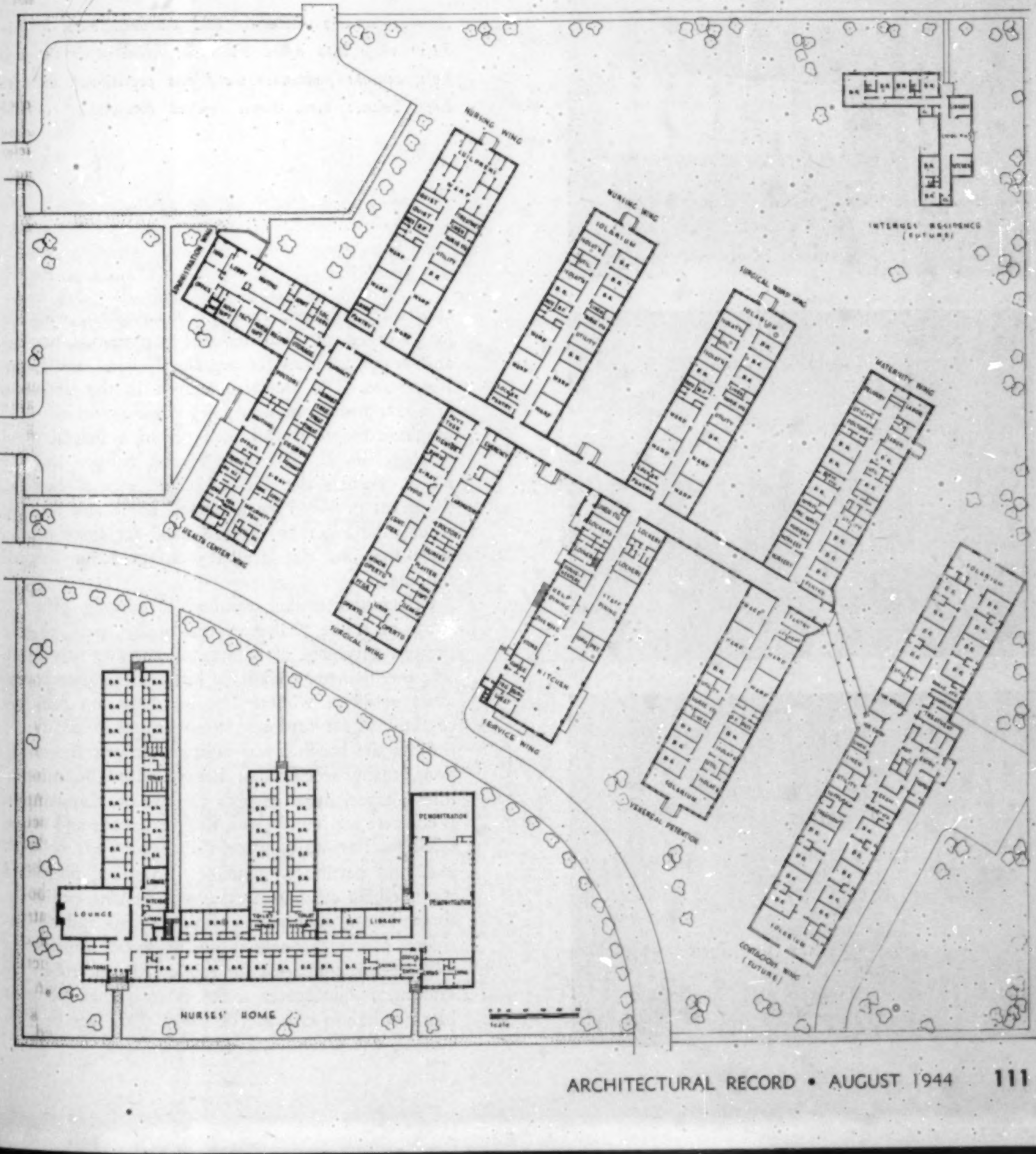

SUMMER SUNRISE
WINTER SUNRISE
8
9
10
11
12
1
2
3
4
WINTER SUNSET
SUMMER SUNSET
ORIENTATION DEVELOPMENT

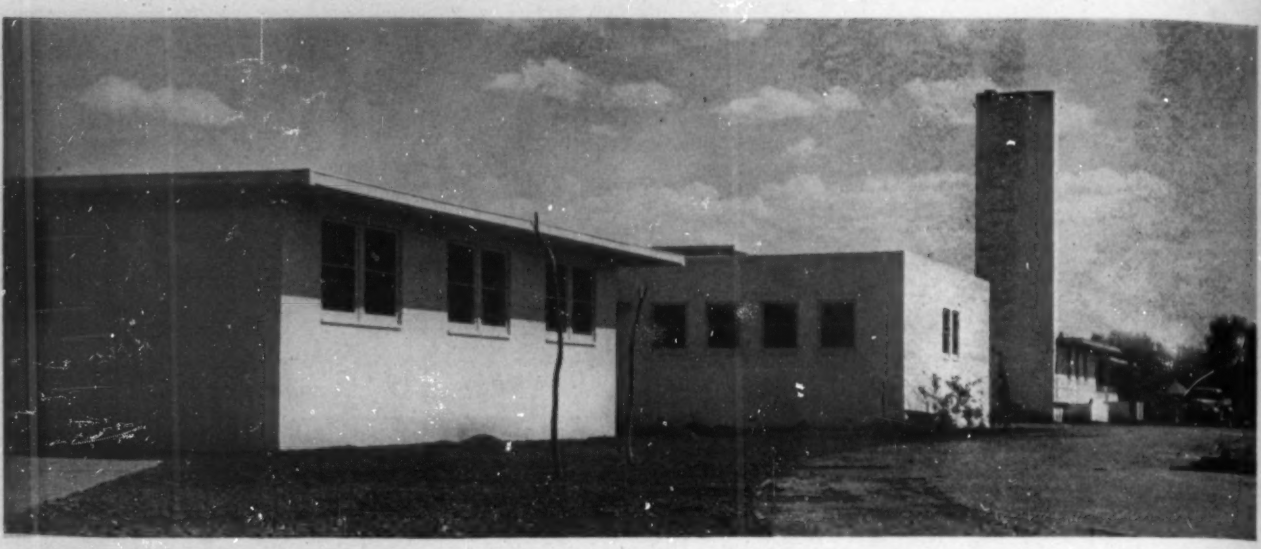

DECEMBER
12 N
11
10
9
8
1
2
3
4
am
pm
ALTITUDE


NOON-JUNE
7 am-JUNE
9:30 am-JUNE
5 pm-JUNE
2 pm-DEC.
SUNRISE-DEC.
N.E. EXPOSURE
S.W. EXPOSURE
TYPICAL SECTION THROUGH WING



Orientation diagram indicated the placing of the main wings on a line 30 degrees east of north (north the vertical in diagram) to take maximum advantage of sun's travel


NURSING WING
NURSING WING
ADMINISTRATION WING
LOBBY
HEALTH CENTER WING
SURGICAL WING
SERVICE WING
KITCHEN
SURGICAL WARD WING
MATERNITY WING
SOLARIUM
WARD
VENEREAL DETENTION
CONTAGIOUS WING (FUTURE)
INTERNES' RESIDENCE (FUTURE)
DEMONSTRATION
LIBRARY
LOUNGE
NURSES' HOME
scale

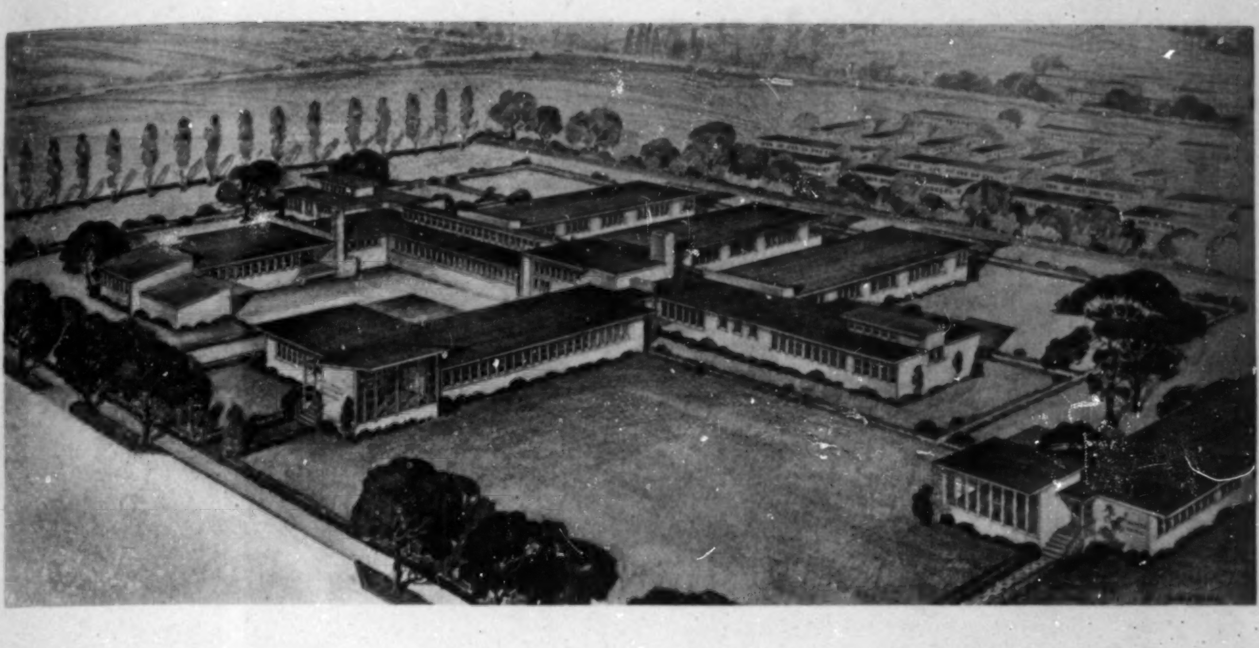


Above: service driveway and entrance near kitchen
Left: view into office entrance; wainscot is redwood
Left, center: pediatrics ward has partitioned cubicles
Left, below: view down central connecting corridor

efforts of the Rev. Emmett McLoughlin, who has long worked for the betterment of recreation, housing and health facilities for negroes, Indians, and Latin-Americans. The architects helped in the setting-up of a non-profit community organization, which could purchase the land and then obtain a federal grant through the U. S. Public Health Service and the FWA. Besides the 150-bed acute general hospital, the grant provided for a nurses' home and training school, the latter an especial need for these people, since they are not generally accepted for hospital training.

Orientation studies resulted in placing principal wings on a line 30 degrees east of due north, to take greatest advantage of winter and summer sun travel. The thermometer commonly hits 110 in summer, and averages 70 in winter. The buildings are fully air conditioned for summer, steam heated in winter.

Since the hospital was built under wartime conditions, many specification items had to be compromised, especially as regards the metals. Construction is concrete for foundations, basement walls and floors; brick exterior walls, painted; interior walls of brick and stud partitions, plastered. Acoustical fiberboard was used for ceilings in maternity sections, pediatrics, surgery suite, staff rooms, dining rooms and all corridors. Floors throughout are of wood construction with hardwood, except for reinforced concrete in the kitchen. Public spaces make extensive use of glass block; window sash are of wood. Cost per bed, including equipment, was $2,286.

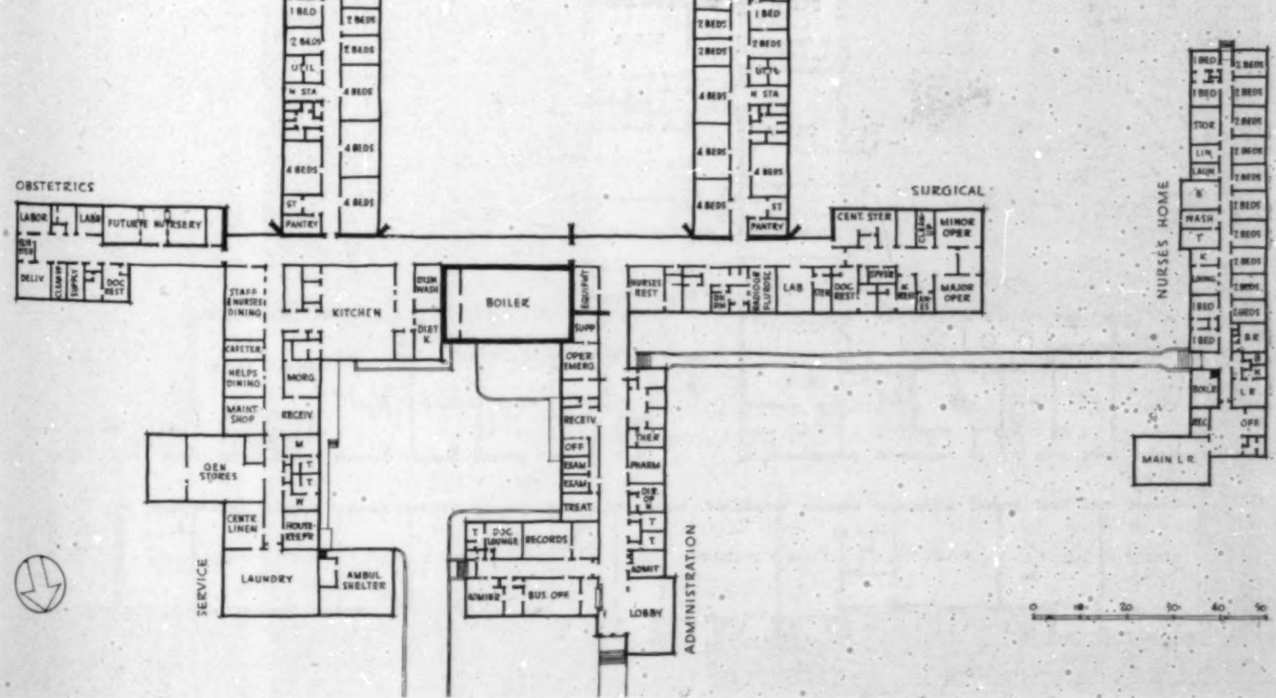


COMMUNITY HOSPITAL, WARTIME MODEL

Pittsburg Community Hospital, Pittsburg, Calif.
Douglas Dacre Stone and Lou B. Mulloy, Architects

ONE-FLOOR construction in the Pittsburg Community Hospital helped to eliminate fire hazards and the extensive ramps, stairs and elevators of multi-story buildings, besides making a considerable saving in critical steel. The hospital, located at Pittsburg, California, is similar in design and construction to the Vallejo Community hospital shown on the following pages, and like Vallejo was designed for a locality that had been greatly expanded by the influx of war workers. The buildings were erected on six acres of ground facing on a main arterial leading to Camp Stoneman, a large Army camp.

Basic design of buildings and cabinet equipment hinged on the use of a 4-ft. module, which permitted lowered costs and decreased erection time.


NURSING
SOLARIUM
1 BED
2 BEDS
4 BEDS
UTIL
N STA
ST
PANTRY
NURSING
SOLARIUM
OBSTETRICS
LABOR
LAB
FUTURE NURSERY
DELIV
CLEAN UP
SUPPLY
DOC REST
STAFF & NURSES DINING
CAFETER
HELPS DINING
MAINT SHOP
GEN STORES
CENTR LINEN
LAUNDRY
SERVICE
KITCHEN
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AMBUL SHELTER
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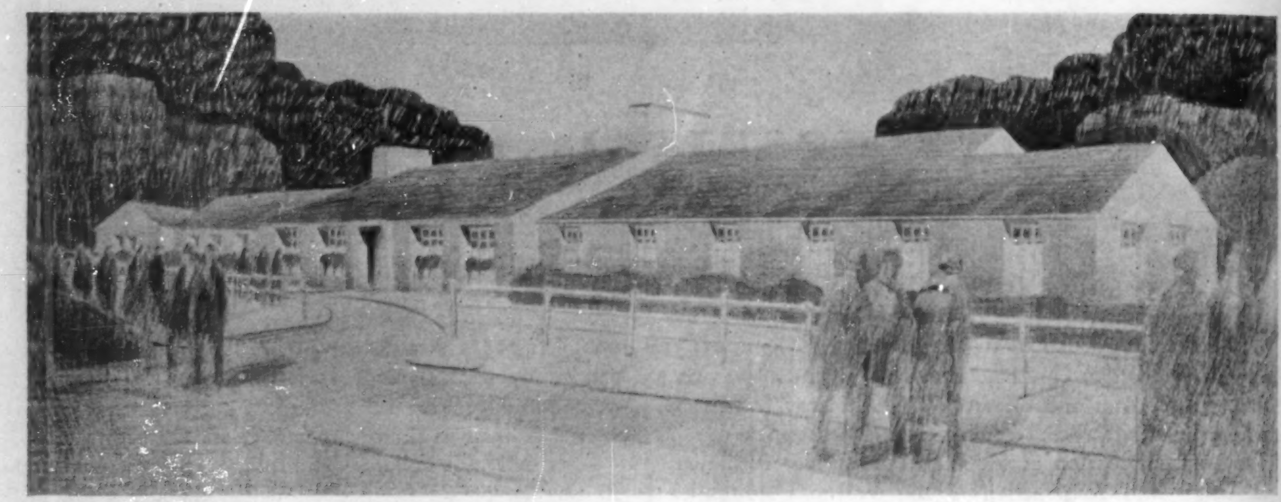
GENERAL HOSPITAL FOR A SMALL COMMUNITY

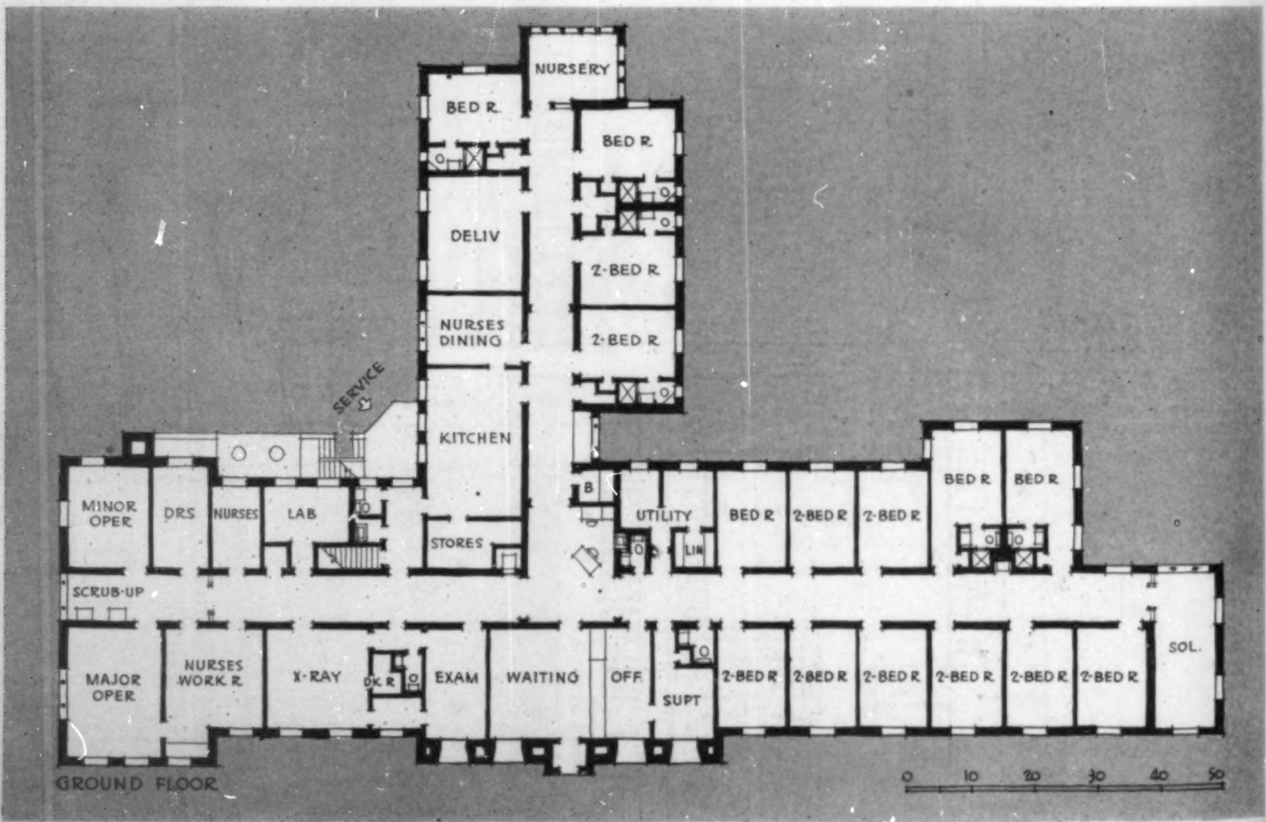
Schmidt, Garden

and Erikson,

Architects

WITH an eye to future expansion by addition to the forward wings of the building, this 25-bed general hospital has been proposed for a community of 4,500. When built, the construction will be fireproof throughout, and brick will be the principal exterior finish. Of particular interest is the segregation of the maternity wing shown at the top of the plan, where, it may be noted, the two bedrooms to the right of the hall can be included in the maternity department or excluded at will by means of two doors in the corridor. Thus, the maternity department may contain four or six beds as required. As part of the possible future expansion, the service wing has been planned large enough to provide for a hospital of 40 to 50 beds. Estimated cost under present conditions in the Middle West is about $125,000 or $5,000 per bed; however, if additional wings were added; per bed cost would be substantially reduced.




NURSERY
BED R.
BED R.
DELIV
2-BED R
NURSES DINING
2-BED R
SERVICE
KITCHEN
MINOR OPER
DRS
NURSES
LAB
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B
UTILITY
LIN
BED R
2-BED R
2-BED R
BED R
BED R
SCRUB-UP
MAJOR OPER
NURSES WORK R
X-RAY
DK R
EXAM
WAITING
OFF
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2-BED R
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SOL.
GROUND FLOOR
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HOSPITAL FOOD SERVICE

*By Harry Blumberg**

Good food, attractively served, fresh and appetizing, has much to do with a patient's recovery, for it has both a psychological and a physical effect. The reputation of a hospital with the public may well stand or fall on the basis of its food service as much as its hospital treatment.

Hospital food service is a matter beyond the control of the architect because it involves the competency of the hospital staff, from administrator and dietitian, to cook's helper and dish washer. However, the architect can contribute mightily to efficient food service by working out, in collaboration with the hospital administration and the dietitian and kitchen engineer, both the system of food service and the detailed requirements. The detailed requirements do not end with the kitchen itself but cover the whole cycle, from the delivery of the raw materials through preparation, cooking, distribution, patients' service, and the return of trays for dish washing, sterilizing, and garbage disposal.

Sterilization

Hospitals postwar will be equipped with automatic sterilizing washers for all dishes, glassware and silver. The washers will be equipped with temperature boosters and timing devices to provide thorough sterilization in the automatic washing, rinsing, and drying operation. In addition the utensils can be stored in sterile and sterilizing racks.

Food Distribution Systems

The food distribution system to be chosen depends on the size of the hospital, its purposes, the relative amount of special diet as compared with mass feeding, and whether the general plan of the hospital is vertical or horizontal. It must be remembered that the staff of the hospital must be fed, with due regard to professional segregation; this, naturally, in addition to the food service to patients.

One system, especially in private or semi-private hospitals, is to serve patients on trays directly from the kitchen itself, by means of heated trucks.

For large hospitals, some means of keeping food warm (or cold) and in good condition between point of loading and the patient, must be employed. Distribution trucks are of two kinds: those that transport the food in bulk, and those which transport loaded trays. The bulk food trucks may be insulated and electrically heated. Naturally food trucks for cold dishes, such as ice cream, etc., are thoroughly insulated. Where the bulk system is used, a truck of food is transported to a floor or section serving pantry where it is placed on trays for the patients. In one type of system, the portable truck practically gives bedside food service. Naturally there is less service space required in the kitchen when there are service pantries on each floor, but provision must be made for the loading, handling, storage and maintenance of the food trucks.

In multiple-story hospitals, a traveling belt and subveyor for rapid handling of trays are sometimes used. The trays pass the various serving counters and the proper diet is placed on each individual tray.

The administration and dietitian should be consulted and definite decisions regarding the types of service to be rendered and the system to be used in serving each component part of the "feeding load," should be made. Only then can proper planning of the kitchen be undertaken.

Delivery and Storage

Arrangements for food delivery and food storage depend upon location of the hospital and the buying habits of its administration. With daily orders and delivery, less space is needed for storage in the hospital. Also, the trend toward the purchase of frozen food may increase the amount of refrigeration needed but, conversely, will minimize the space necessary for preparation, such as peeling, paring, cutting, etc. (The subject of refrigeration is covered in another article. See page 97).

Kitchen Plans

The principles of kitchen planning are the same for a hospital as for any other type of food service but details of arrangement differ because of variety of service called for and the additional paraphernalia for serving hundreds of rooms instead of a few concentrated dining areas.

The secret of good kitchen planning is: (1) proper sequence of operation; (2) proper equipment, designed for its particular function; (3) competent personnel; (4) proper administration of routine system. The flow chart of a hospital, with its variations for different services, should be worked out in conferences with the superintendent, the dietitian, and the kitchen expert.

Kitchen Equipment

Modern kitchen equipment is now designed for specific operations and it is no longer possible merely to specify a battery of ranges, with the idea that the range is a jack-of-all-trades and all cooking can be done on it with pots, pans and kettles. Broilers, fryers, steam kettles, roasters, cereal cookers, etc., not only perform their cooking function more efficiently but save time and space in the kitchen. The relationship of water supply and sinks and cooks' tables with the actual cooking equipment requires highly specialized planning technique to insure the elimination of lost steps and motion. The job of food preparation is accomplished with many mechanical devices which reduce the time and labor and conserve space. These include parers, peelers, slicing machines, mixers, etc. (See listing on Time-Saver Standards page 117).

The pastry or bakery section is naturally in a separate part of the kitchen, if not in a separate room, where it has its own ovens, steamers, tables, kettles, mixing troughs, and refrigeration.

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* *Vice-President, Nathan Straus-Duparquet, Inc.*

Chicago Architectural Photographing Co.

Left. A well appointed and equipped bakery for a large hospital. Right. A modern cafeteria counter in a dining room for nurses. Wesley Memorial Hospital, Chicago; Thielbar and Fugard, architects

REFRIGERATION AND AIR CONDITIONING

(Continued from page 98)

Ammonia systems installed in the future generally must be in isolated engine rooms, with cold brine or cold water lines extending to the boxes and air conditioners. The ice tank is often in the machine room or other isolated space. Such systems, properly designed and installed and given ordinary attention, have proved dependable and economical. Low-pressure refrigerants are considered safer, provided they are installed where the gas cannot come in contact with a flame or spark, and these systems are generally less expensive, especially for small loads. Full automatic controls are now available for operating either ammonia or Freon equipment. Carbon-dioxide systems are hardly ever specified, because of the heavy initial cost and high operating pressures involved. The actual horsepower requirements for ammonia machines are lower than for Freon compressors, but the latter take very much less than CO_2. Whatever refrigerant is employed must meet local safety regulations in its application. Safety Code B-9 of the American Standards Association lays down practical rules for safeguarding refrigeration installations.

Consider the use of evaporative condensers, as a saving in cooling water. A purger for removing air and non-condensable gases, practically without loss of refrigerant, should be a part of large and medium-sized systems.

In arranging the air conditioning system, the dry-bulb temperature and the relative humidity should be independently controlled, both in summer and winter. Quiet-operating equipment should be selected. Explosion-proof motors and controls are preferable in the operating and delivery rooms. Pneumatic controls eliminate any danger from electric arcs. Insulation and sound-proofing are desirable in the conditioned areas, especially at the ceilings. Awnings and venetian blinds outside help keep out heat in summer.

The layout will probably include a central system furnishing fresh air and ventilation to the various rooms. This supply is filtered and then dehumidified sufficiently to maintain the dew point wanted in the major areas. Additional treatment in separate conditioners dries the air further, as required in the oxygen room and allergic wards. To obtain low relative humidities, the water might have to be cooled to 35°, and part of the air to 40°. The air leaving each room can be exhausted either through regulators in the windows, or in the doors leading to the halls; sometimes through both. Exhaust fans are recommended for the kitchen, bathrooms, sterilizing rooms, etc. The building committee, surgeons, head nurse, dietician, and operating engineer will all have preferences regarding details of the work. Various considerations and limitations probably will make compromises necessary.

Those interested will find much helpful information in the booklet on Hospital Air Conditioning by Dr. C. P. Yaglou, Harvard School of Public Health, Boston (1936). This contains an extensive bibliography. Other articles of particular value include Chapter 60 in the American Society of Refrigerating Engineers' Data Book, Vol. II (1940), and that by Dr. Albert G. Young in the Hospital Yearbook, 19th Edition (1941).

KITCHENS, 50-BED HOSPITAL

Summary of recommendations as developed by the technical staff of the Hospital Facilities Section of the U. S. Public Health Service—Marshall Shaffer, Hospital Architect and Neil F. MacDonald, consultant

Usual Requirements. The Dietary Department comprises main kitchen and bakery, diet kitchen, formula room, dishwashing, refrigeration, garbage and can washing, and day storage.

Dietary Department. The dietary department will normally be located in the basement or on the ground floor. It should not be placed in the basement unless this level is sufficiently above the ground to permit adequate natural light and ventilation.

The location of the dietary department unit must be carefully planned with due consideration of the receipt and storage of perishable and non-perishable supplies, preparation and cooking of food, service to patients from both the main cooking area and the special diet kitchen, service to personnel dining rooms, returning and washing of dishes, and garbage disposal.

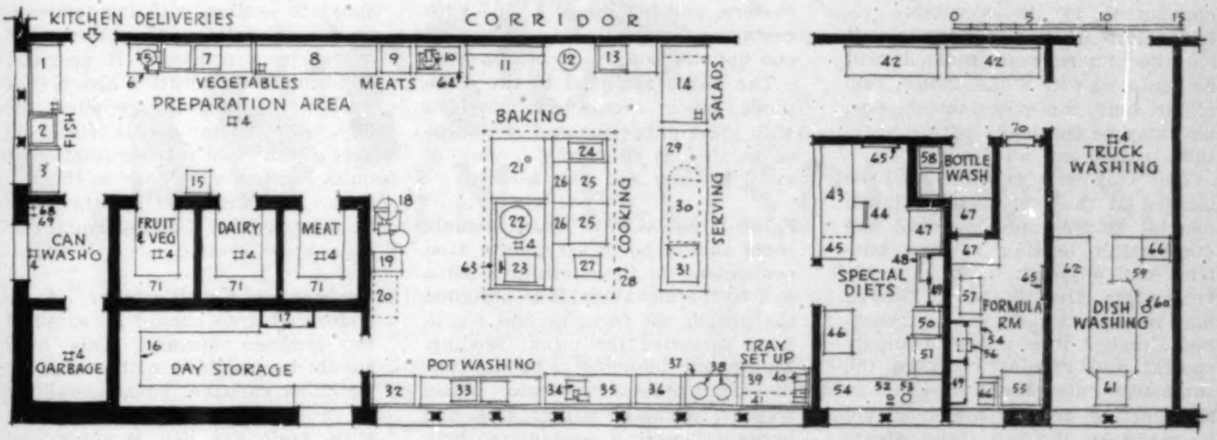
Special attention must be given to the utilities service, ventilation and sanitation. Minimum ceiling height should be 12 ft. Floor and walls should be of tile to a height of at least 6 ft. Mechanical ventilation independent of the general ventilating system is recommended for the kitchens.

Main Kitchen and Bakery. The area assigned comprises all space for food preparation (except the special diet kitchen and infant formula room); pot washing; serving area for trays; and food truck storage. This area must be carefully laid out with consideration for traffic lines within the kitchen, and for grouping with related units.

Segregated from, but still part of the main kitchen, will be the meat cutting, vegetable preparation, bakery, pot washing, and tray service areas, each to be so located in relationship to the food cooking area that the traffic flow will be direct and unbroken. In addition, the diet kitchen and refrigeration areas, considered in subsequent paragraphs, must be located so as to function effectively with minimum traffic.

Routing should be from supply source through preparation, cooking and serving to elevators or to dining rooms. Provision should be made in the main kitchen for ranges, roasting ovens, hot plates, vegetable steamers, steam jacketed kettles, broiler and deep fat fryer (all hooded and with mechanical ventilation), bain marie, mixing machine, and slicing machine.

There should be a depression in the floor with drain and grease trap under kettles. Sinks, counters, pot and pan racks, work tables, bulletin board and menu boards will be required. A special pot washing area in a remote part of the main kitchen requires special



Kitchen for a 50-bed general hospital using central tray service

1. Work table, open below, 24 by 54 in.
2. Sink, 24 by 24 in.
3. Fish box, 24 by 36 in.
4. Floor drain
5. Peeler, 8 lb. capacity, bench model
6. Table, 24 by 24 in.
7. Vegetable sink, 2 compartments and 1 drainboard, 24 by 72 in.
8. Work table, can space and vegetable bins below, 24 by 96 in.
9. Meat block, 24 by 24 in.
10. Mixer, 12 qt. capacity, bench model
11. Baker's table, bins and drawers below, spice bins above, 30 by 60 in.
12. Baker's stove
13. Sink and drainboard, 24 by 48 in.
14. Refrigerator, wood work top, shelf over end
15. Water cooler
16. Shelving, 18 in. wide, first shelf 36 in. from floor
17. Locked dish cabinet
18. Food cutter, 14 in. bowl
19. Tray table, 18 by 24 in.
20. Space for ice cream cabinet
21. Bake oven
22. Kettle, 20 gal. capacity
23. Steamer, 2 compartments
24. Fryer
25. Range, 32 in. wide
26. Elevated broiler
27. Cereal cooker, 5 gallons
28. Hood
29. Cook's table
30. Pot rack over
31. Bain marie
32. Pot and pan rack, 24 by 36 in.
33. Pot washing sink, 2 compartments and 2 drainboards, 24 by 96 in.
34. Meat slicer
35. Work table, cabinets below, 24 by 68 in.
36. Bread box with cutting top, 24 by 36 in.
37. Urn stand, 24 by 42 in.
38. Urns, 5 gallons coffee; 10 gallons water
39. Tray setup table, tray storage below, 30 by 54 in.
40. Silver compartments.
41. Two shelves above table
42. Open tray truck, 25 tray capacity
43. Counter, open below, 30 in. high
44. Chair
45. File cabinet built in below counter
46. Tray rack for 9 trays
47. Refrigerator, 6 cu. ft.
48. Sink and drainboard, 20 by 42 in.
49. Cabinet
50. Gas range, 4 burners and oven
51. Steam table, 27 by 31 in.
52. Juicer
53. Mixer
54. Counter, cabinets below, 36 in. high
55. Refrigerator, 8 cu. ft.
56. Hot plate
57. Bottle sterilizer and pasteurizer, 54 bottle capacity
58. Sink, 2 compartments
59. Soiled dish table
60. Scrapping block
61. Dish washing machine, 2500 dishes per hour
62. Clean dish table
63. Curb
64. Table, 24 by 36 in.
65. Bulletin board
66. Sink
67. Counter, open below, 36 in. high
68. Steam outlet
69. Hot and cold water outlet
70. Dutch door
71. Refrigerator shelving

KITCHENS, 50-BED HOSPITAL

deep sinks with drain boards and grease traps, can-washing sink at floor level, pot racks and floor space (with drain) for tray cart washing.

A separate bake shop may or may not be needed, depending on local conditions and the size of the hospital; where provided, it will require space for a bake oven, flour outfit, mixing machine, work counter, cupboards, bread slicer, racks, sink, and flour storage. It may have a confectioner's kettle, and must have either a separate refrigerator or convenient space available in the refrigerator area.

Meat preparation will require cutting blocks, racks, hooks, and scales, and may be furnished with a power operated meat saw, all convenient to the meat refrigeration unit. The space devoted to meat preparation in larger hospitals may be enclosed as an anteroom to the refrigerator.

The vegetable preparation area should be in a relatively remote section of the main kitchen, but convenient to the vegetable refrigerator. In larger hospitals it may be in a separate room. It will be equipped with sinks, tables, vegetable bins, and vegetable peeler, and may be furnished with a vegetable cutter and slicer.

The tray serving area will be located at the end of the kitchen nearest to the elevators and the dumbwaiter leading to floor pantries and adjacent to, or just beyond, this area the diet kitchen may be situated. Such an arrangement makes it possible to supply special and regular trays to the same tray carts simultaneously. In this serving area provision should be made for the urn stand, steam tables, dish warmer, dish and tray racks, ice cream cabinet, heated tray carts, cutlery, etc. Refrigerated space, near the serving area, should be available for salads.

An ice cream freezer, with hardener and storage cabinet is advantageous even in a 50-bed hospital, and in larger hospitals should be in a separate room with adequate facilities for sanitation and efficient functioning.

Special provision should be made for heating the kitchen area, especially in northern climates. It is customary to overheat slightly the sections of the kitchen removed from the cooking area in order to avoid too marked temperature changes for employees.

Provision should be made for adequate artificial lighting, outlets for electrical equipment, floor drains, grease trap, abundant soft water supply, hot water at 180° minimum, and steam supply at 30 to 40 lb. pressure. Overhead piping in kitchen areas should be avoided. Convenient hand washing facilities must be available for all dietary employees, especially in toilet rooms.

Diet Kitchen. A diet kitchen which is not in a separate room, but which is merely set up as an area in that end of the kitchen closest to the elevators, is recommended. In this case the diet kitchen will be separated from the regular tray serving area by a space available for tray racks and tray carts.

Minor cooking equipment is all that should be required in the diet kitchen, since bulk cooking of most menu items will be done in the main kitchen. Space will be required for a small range, refrigerator, small mixing machine with puree attachment, steam table, coffee urn, and hot plate. A sink with drainboard, work table, cupboards, and bulletin board will be required.

The space assigned to the dietitian's office should be provided with glass partitions and should be so located as to permit a view of main kitchen and diet kitchen.

Formula Room. The infant formula room should be in a separate area convenient to the dietitian's office and to the elevators. It is designed to furnish all formula and sterilizing facilities for infant feeding. Equipment includes a bottle sterilizer, hot plate, refrigerator, bottle washer, cabinets, counter, sink, and bulletin board. A pasteurizer may or may not be required, depending on local preference, milk supply, and whether or not evaporated or dried milk is used. Where pasteurization is required, a combination pasteurizer and bottle sterilizer is the preferred installation.

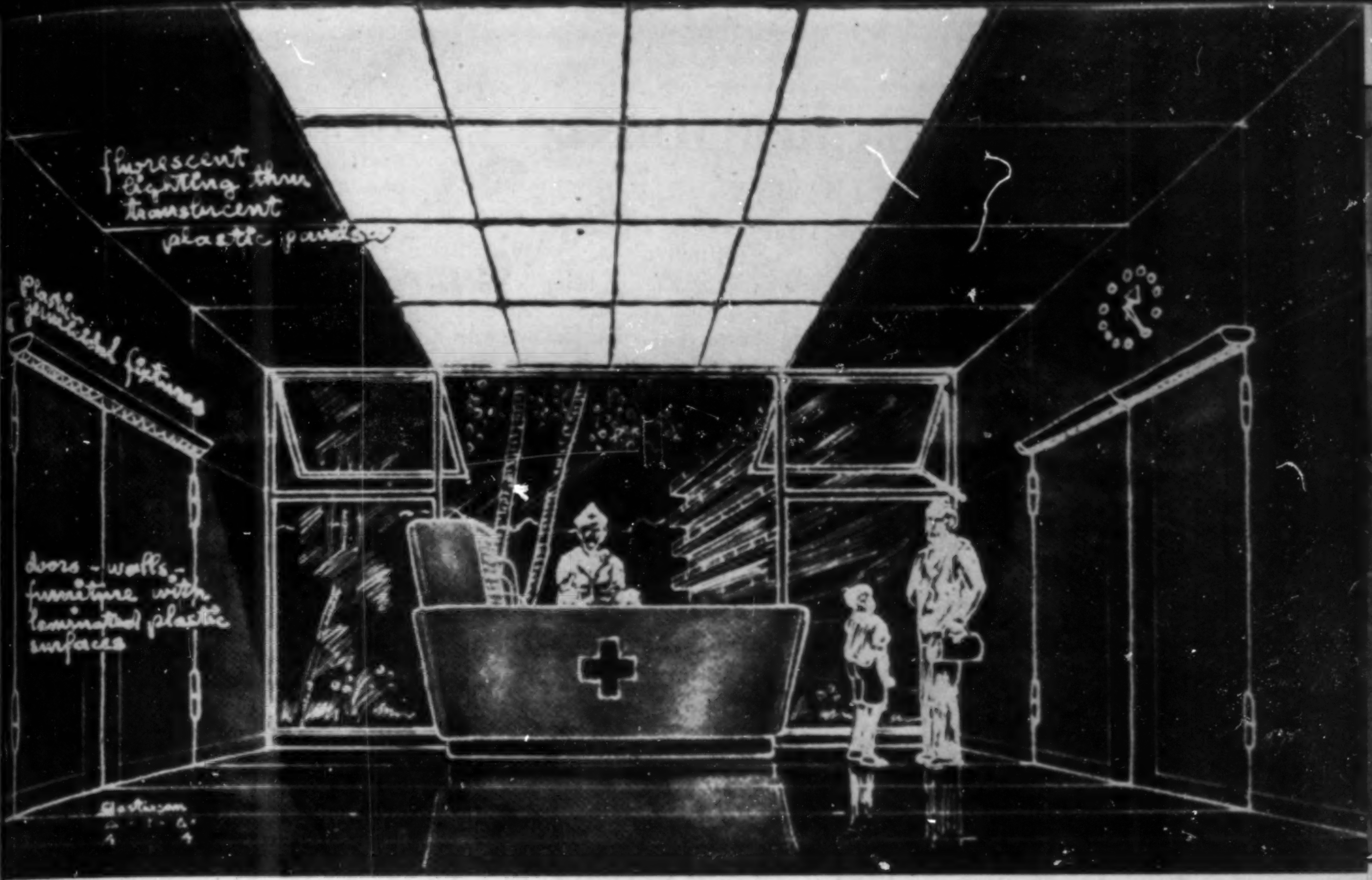
Dishwashing. The dishwashing room is perhaps the noisiest unit in the dietary department, and should be so located that the noise will not be audible in the dining room areas or on the upper floors. It is important that this area receive moistureproof acoustic treatment. In locating this facility, consideration must be given to traffic flow of soiled dishes from the patient and dining room areas, through the dishwashing process, to the dish racks and cupboards, and thence to the tray serving and dining room areas with minimum cross traffic.

The room should be equipped with slide counters for soiled dishes, leading directly to the dishwasher, each counter having a section for dish scraping; a garbage receptacle; a dishwashing machine with abundant water supply and individual grease trap; glass-washing and tray-washing facilities; a counter for clean dishes; buffer and polisher; dispensing tank; and rack and cupboard space for clean dishes and cutlery either in the area or in an adjacent area in the kitchen which is convenient to the serving area. The floor will be fitted with a grease trapped drain.

Refrigeration. Three main walk-in compartments should be furnished in the refrigerator: one for meats, which should be fitted with both hooks and shelves, one for dairy products, and one for fruits and vegetables. In addition to these, a fish box should be supplied, and a separate section with low-temperature refrigeration for storage of quick-frozen products. If possible, additional refrigeration space (not walk-in) should be supplied for left-overs and for salads, either as part of the main refrigeration or as units located elsewhere in the kitchen. The main refrigerator may be operated by individual units or by a brine system.

Garbage and Can Washing. A refrigerated area should be supplied for garbage storage. This area should be provided with scales for weighing garbage. There should be an adjacent cement floor space with drain for can washing and sterilizing by means of hot water and steam jets. The area should be accessible to the outside so that garbage can be readily moved.

Day Storage. Provision of a day storage area in the kitchen is based on the assumption that a central stores room for the hospital will be maintained, and that non-perishable supplies will be requisitioned from the central stores daily by the dietitian for the ensuing 24-hour period. The so-called "day storage" is therefore designed for non-perishable supplies for a period of not more than 36 hours. It should be convenient to the cooking area, and equipped with appropriate shelving, and vermin-proof storage cans.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Plastic jewelled fixtures
doors - walls - furniture with laminated plastic surfaces

PLASTICS IN HOSPITALS

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The following list suggests the possible applications of G-E plastics in modern hospitals.

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BACK THE INVASION WITH WAR BONDS

RUSSIA PLANS FOR REBUILDING*

By Grigory Kuznetsov
Corresponding Member Academy Architecture U.S.S.R.

THE QUESTION of widespread adoption of the most up-to-date building technique in the U.S.S.R. has become exceedingly important in view of the tremendous scope of reconstruction work required to make good the damage done by Hitlerites to our Soviet towns and villages.

Work restoration is being carried out in a number of Soviet republics which differ very considerably with regard to climate and available raw materials for building; restoration work therefore follows a number of different lines. We will build and rebuild with the most diverse kinds of material ranging from such ancient building materials as plaster of clay and straw, sunbaked bricks and mineral wood, to such effective modern materials as waterproofed plywood, orgalite, etc. Despite the great variety of materials used, the work of erecting new buildings has its basis in the modern and progressive building materials industry.

In our prewar building we made quite considerable use of mechanization and prefabrication, but applied them only to constructions of ordinary design using more usual building materials. We did not apply all the achievements of science and techniques to produce newer and more effective building materials, nor had we adopted new constructional principles in our building designs.

In postwar construction the latter will be fundamental law for our engineers and architects. Modern science and techniques enable us to put up brick buildings with half or even a third the quantity of bricks and mortar which we formerly used; timber houses can be built with a quarter or a fifth of the timber that formerly went into them, etc. Reduction in the amount of building materials used also means a saving in electric power and fuel used in their manufacture, a smaller number of trucks for transport and a smaller number of workers to handle them, etc.

Experience and the introduction of modern constructions and building methods have taught us that we can erect a wooden building, for example, in 0.5 to 0.75 man-days instead of the three to six man-days formerly required, and reduce the weight of walls to between 25 and 40 kg. by sq. metre instead of the 150 to 300 kg. used in primitive village houses formerly prevalent in Russia. This reduction will not in any way affect the thermotechnical qualities of the walls.

Modern science and techniques not only enable us to improve our former methods of erecting a building, but also show us the possibilities of building a house in the same way as we build an automobile, a boxcar or a ship—that is, from prefabricated parts made in factories.

It is well known that building such houses can be reckoned in hours, and that they are ready for immediate occupation. The Academy Architecture U.S.S.R. has been working toward the perfection of these methods for several years and has taken into consideration experience gained abroad in building one and two story houses by these methods. One Peoples Commisariat in the Ural region has organized mass production of such houses from plywood and orgalite. A three-room house can be transported on four 3-

(Continued on page 122)

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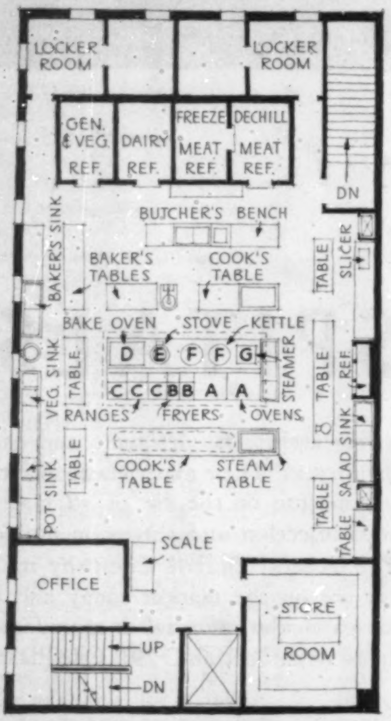
*Received by Cable through the Soviet Information Bureau.

KITCHEN PLAN NO. 14: Fourteenth in a series of successful mass-feeding kitchen plans.

Compactness and versatility are keynoted in this plan for an industrial cafeteria kitchen, designed to serve 2,000.



KEEP FOR HANDY REFERENCE!

COOKING EQUIPMENT USED:

(a) 2 No. 952 BLODGETT GAS-FIRED ROASTING OVENS
(b) 2 Fryers
(c) 3 Ranges
(d) 1 No. 982 BLODGETT GAS-FIRED BAKING OVEN
(e) 1 Confectioner's stove
(f) 2 Stock kettles
(g) 1 Vegetable steamer

Designed by: Kitchen Engineering Div., Curtis Equipment Co., Brooklyn, New York

TECHNICAL DATA
IDEAS – ADVICE
INFORMATION
CONSULT YOUR FOOD SERVICE EQUIPMENT DEALER
HE IS AN EXPERT ADVISOR AND COUNSEL

THE TWO NO. 952 BLODGETT ROASTING OVENS in this plan can handle 800 lbs. of meat at a load, in four separately controlled 12"-high sections. (Each section is also equipped for an extra shelf, which would increase the loading capacity to 1,200 lbs.) The No. 982 Blodgett Baking Oven provides 37.2 square feet of baking area in two separately controlled sections, with four 7"-high shelves. For details and specifications of Blodgett Ovens, consult your equipment house or write

The G. S. BLODGETT CO., Inc.
53 Maple Street Burlington, Vt.

Reprints of this new series will soon be available to architects on request.

The Importance of the Architect to our World of Tomorrow

FOR the first time in history, the American people fully realize the productive capacity of our system of Free Enterprise. Industrial output of the United States has surpassed anything the World has yet known . . . exceeded our own most optimistic expectations . . . through this we glimpse the latent potential of American Industry in the New World that lies ahead.

Now conscious of our strength . . . of our opportunity for vast expansion . . . the architect has an opportunity greater than ever before for the designing and building of new and even more efficient municipal, state and federal buildings, schools, hospitals, hotels, office buildings, factories and homes.

In the minds of our designers and engineers . . . . trends in styling, functional utility, comfort and luxury . . . are keeping pace with the most ambitious plans of the architect.

When men and metal are *honorably discharged* . . . our facilities, now converted to the production of war materiel, will again manufacture desks, chairs, tables, filing cabinets, and other equipment styled to the trend for better living in the World of Tomorrow.

The General Fireproofing Company

Youngstown 1, Ohio

ton trucks or in one railroad boxcar. Ten men can erect it in one day.

In order to erect the large number of buildings we require, we have to produce tremendous quantities of building material and use the material economically. The main economies are effected in rational design and building methods. The most important thing is to make correct use of those building materials available in the vicinity of the construction site. In rebuilding towns, houses and industrial buildings, for example, use must be made of broken bricks and plaster which must not be considered as rubbish but as building material. Our engineers have worked out methods of employing broken brick rubble for both small and many-storied houses.

In districts and republics to which timber has to be shipped from other regions it must be replaced wherever possible by locally obtainable materials. Our scientific organizations have shown the possibility of building timberless houses where there is no wood, but where bricks, slag, gypsum and other materials are available. Thin vaulted brick roofing designed by the Academy Architecture U.S.S.R. has been widely used in buildings in central Asia where arches with a span of 60 ft. and more have been built. This roofing method is also being used to some extent around Stalingrad, in the Donets-basin and other regions destroyed by German occupants.

Where timber baulks or steel girders were formerly used, brick constructions are being employed to replace them.

The necessity of applying up-to-date building methods and limiting the transport of building materials required that we develop our industry to produce the best modern materials from local raw materials.

We must make the fullest use of industrial waste material for building purposes. At present this waste is only a burden to basic industry, and its employment will enable us to exploit the raw material resources of the country to the full. One of the most important things is to make the fullest use of local materials as heat insulators. Modern technical methods, for example, enable us to produce "mineralwood" from soft stone that is found everywhere, and from the slag from blast furnaces and other factory furnaces; this is material weighing 1/5 of the equivalent amount of timber, and it has, moreover, an insulation coefficient three or four times higher. Factories for the production of mineralwood are already in existence in the U.S.S.R. This industry must be developed and perfected this year. Similar refuse material is to be obtained from paper, from cellulose mills, sawmills and woodworking plants from which huge sheets of "orgalite" are made, a material with one-third the weight of wood and an insulation coefficient three times as high. Orgalite panels are not only light and cheap as insulators but also form splendid material for facing interior walls and ceilings. Raw materials for production of the panels in the U.S.S.R. is inexhaustible. Waste material from paper mills in the Molotov region alone is sufficient to produce 7,500,000 sq. metres of high-grade orgalite annually. We will have to build a number of plants in places where raw material is available to produce orgalite.

In general we will have to build many factories for the production of building materials and fittings. We are also taking into consideration the fact that many of our plants that are at present working for defense will be converted for the production of building materials after the war.

SISALKRAFT

... directly exposed to the elements for weeks at a time, is setting new records for toughness and weatherproof qualities!

Protecting deckloads of war supplies from wind-driven sleet, snow, salt water, ice and dirt, SISALKRAFT is successfully withstanding unprecedented abuse!

In a few weeks of such punishing war service, SISALKRAFT is withstanding more abuse than it would get in a lifetime of normal building use. Never before has a building paper been so drastically tested and so conclusively proven to be weatherproof, windtight, tear-resistant and scuff-proof!

Those properties that make SISALKRAFT so valuable in protecting war materials are the very same qualities so essential in its peacetime uses.

With this unmatched record of wartime achievement, SISALKRAFT will again be available for building construction, general job protection and other uses when the war ends.

In your postwar planning count on SISALKRAFT. Its war service record is convincing proof of its toughness, permanence and outstanding weatherproof qualities proved for nearly 25 years in the building field.

Assures Dry Concrete Floors When Used Over Subfill
Cures and Protects Newly Poured Concrete
Repels Wind and Moisture When Used in Walls
Back of Stucco, Over Studs or Sheathing
Makes Floor Construction Dust-Tight
Protects Equipment & Materials Stored in the Open

THE SISALKRAFT CO.
205 W. WACKER DRIVE · CHICAGO 6, ILL.
NEW YORK · SAN FRANCISCO · LONDON · SYDNEY

Manufacturers of SISALKRAFT, FIBREEN, SISAL-X, SISALTAPE AND COPPER-ARMORED SISALKRAFT

Specialized Plumbing FOR THE HOSPITAL YOU ARE PLANNING

▲ *Crane scrub-up sinks, instrument sinks and other equipment aid in assuring absolute sanitation.*

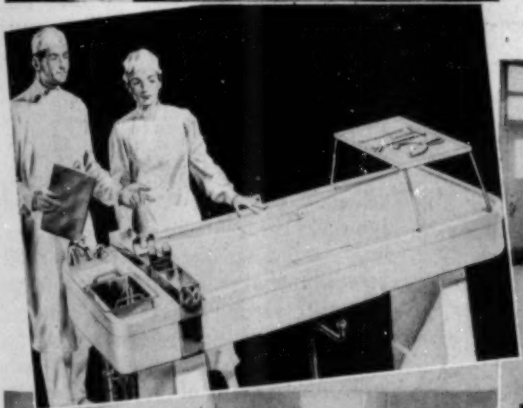
The emergency room requires scrub-up sinks, disposal sinks, and other plumbing equipment—you will find them all in the Crane line. ▼

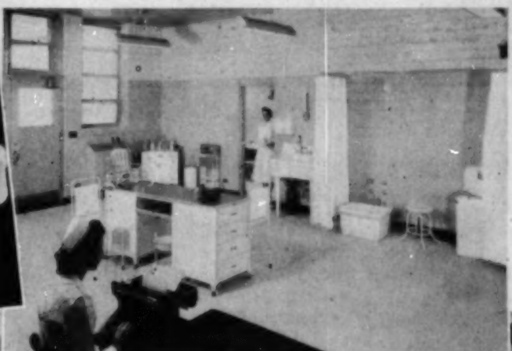
Crane disposal sinks are made in a variety of styles to meet every hospital need.

You will find the latest equipment for every branch of hydrotherapeutic treatment in the Crane line.

JUST as the plans for hospitals are highly specialized—so the plumbing equipment for hospitals is highly specialized too. In the complete Crane line you will find the equipment you want for every department in the hospital—equipment that has been designed in cooperation with surgeons and hospital administrators, to meet the unusual requirements of these institutions.

Consult your Crane hospital catalog for information on the plumbing requirements of the buildings you are designing and call the nearest Crane Branch for further information.



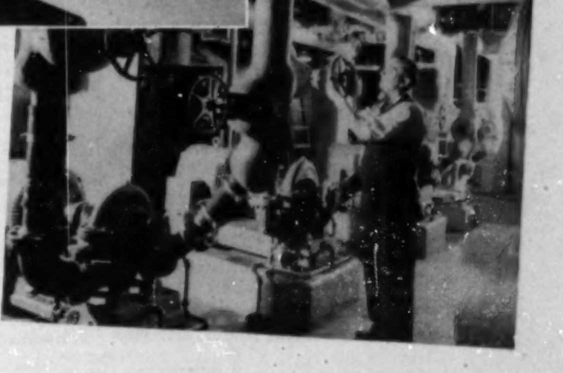


◀ *The industrial hospital is an important part of every manufacturing plant. Crane equipment is helping keep America's worker army on the job.*

Crane offers a complete line of piping, valves and fittings for every plumbing and heating installation. ▼

◤ *Crane Duraclay autopsy tables are designed for maximum sanitation and maximum convenience. They offer the latest improvements for modern autopsy technique.*

◀ *Whether you are planning bathrooms for private rooms or washrooms for wards, Crane fixtures meet every requirement.*



CRANE

CRANE CO., GENERAL OFFICES:
836 SOUTH MICHIGAN AVENUE, CHICAGO 5

VALVES • FITTINGS • PIPE
PLUMBING • HEATING • PUMPS

NATION-WIDE SERVICE THROUGH BRANCHES, WHOLESALERS, PLUMBING AND HEATING CONTRACTORS

tables, or booths attached to the building only by nails or screws and removable as units, and installation of equipment or fixtures which require only making a connection to an existing wiring outlet.

Water Heaters

Limited production of electric water heaters for civilian use has been approved by the WPB at an annual rate not to exceed 37 per cent of total production by the industry during the base period, July 1, 1940 through June 30, 1941. Production for civilian use was heretofore prohibited except that found necessary on an appeals basis. Establishment of a regular quota will eliminate the necessity of appeals.

New quotas also have been established for production of non-electric water heaters, and restrictions on manufacture or fabrication of metal jackets for water heaters have been eliminated.

Bathtubs

Production of 50,000 cast iron bathtubs during the third quarter of 1944 has been provided for limited distribution, WPB has announced.

Sale of these tubs will be limited to orders for or ultimate delivery to the Army or Navy, for export authorized by the Foreign Economic Administration, or for installation in construction projects that have been authorized by preference ratings regularly assigned to war housing and other construction projects for which tubs are essential, such as hospitals and institutions.

The following five manufacturers have been assigned the job of producing the tubs: American Radiator & Standard Sanitary Corp., Louisville, Ky.; Crane Co., Chattanooga, Tenn.; Eljer Co., Calem, Ohio; Kohler Co., Kohler, Wis.; Richmond Radiator Co., Uniontown, Pa.

Metal Windows

Metal windows may now be manufactured to fill orders with preference ratings of AA-5 or better instead of the ratings of AA-3 or better formerly needed. The change in the rating structure may result in a slight increase in the use of metal windows for maintenance and repair, Building Division officials said, but any increase that may occur will be too small to necessitate the allotment of additional material or the use of additional labor.

Lumber Control

The over-all control of lumber established by Order L-335 as amended June 23, 1944, affects all users of lumber, including the individual small user who makes his purchase through a lumber yard. Distributors must get WPB authorization to buy lumber for sale to small users, and how much and what kind of lumber the distributor will have on hand for such sale will be controlled by "directions" to the order. These will be highly flexible, WPB said, and are designed to keep the supply-demand situation in balance. Every effort will be made to provide lumber needed for essential civilian home maintenance and repair.

NHA NOTES

Code of Good Practice

A suggested code of good practice for postwar housing was laid before the housing industry last month by John B. Blandford, Jr., NHA Administrator. Mr. Blandford's main points were:

(Continued on page 126)

Photo, Courtesy Boeing Aircraft Company

WOOD AND LAUCKS GLUES Engineered for PERMANENT Construction

This is no "for the duration" job.

These big arch sections, engineered from wood and Laucks glues by Timber Structures, Inc., are going into a $750,000.00, *permanent* brick-veneered cafeteria for employes at Boeing Aircraft's big main plant in Seattle.

Twenty sections like this will make up ten arches, each with a span of 92′ 4″ and a rise at the center of 28′ 3½″. Over 1600 employes will be fed at one time in the 24,640 square feet spanned by the arches.

In war or *postwar* construction, wood and Laucks glues can fill many jobs *better* and *more economically* than other structural materials. For more information on the many interesting possibilities of laminated arches and beams . . . plywoods . . . and the use of construction glues in stressed cover structures and dry-built construction . . . write or wire the world's largest manufacturers of water-proof and water-resistant glues.

I. F. LAUCKS, Inc.
A Subsidiary of Monsanto Chemical Company
LAUXITE RESINS LAUXEIN GLUES

CHICAGO (2)—6 N. Michigan Avenue, SEATTLE (4)—911 Western Avenue, LOS ANGELES (1)—859 E. 60th Street. *Factories:* Seattle, Los Angeles, Portsmouth, Va., Lockport, N. Y. *In Canada, address:* I. F. Laucks, Ltd., Granville Island, Vancouver, B. C., or Hercules-Laux-Merritt Ltd., Stanbridge, Quebec.

CONSULT LAUCKS
AMERICA'S GLUE HEADQUARTERS

FACTS YOU SHOULD KNOW ABOUT ROOF INSULATION FOR POST-WAR BUILDINGS

TEN YEARS AGO roof insulation was considered something of a novelty. But today, more than half of the roof specifications written by architects include insulation. And those who have studied the problems of post-war buildings predict that it will become an absolute "must" in the future, regardless of the type of structure.

Roof insulation was originally recommended to architects and building owners by Johns-Manville for two basic purposes—to save fuel and to make the upper floors of the building warmer in winter and cooler in summer. But it became apparent that there were other important advantages.

Proper Insulation has many Advantages

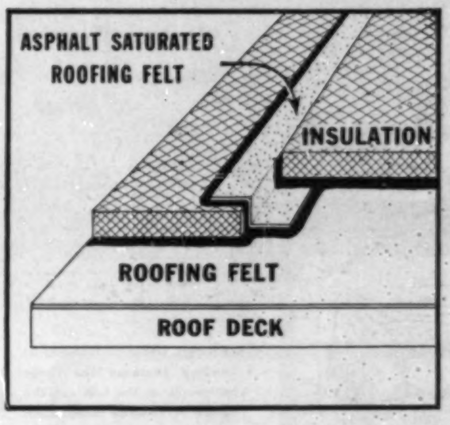
Adequate roof insulation prevents condensation on the under side of the roof deck. This eliminates discoloration of ceilings and damage to equipment due to roof drip. It also protects the roof deck against rot and corrosion. It helps prevent concrete decks from cracking because it guards against sudden temperature changes. Roof insulation also provides protection for the roofing felts themselves because it acts as a "cushion" separating the felts from the deck. This reduces the hazard of cracks in the felts due to movement of the deck.

Finally, adequate roof insulation is vital to the efficient operation of air-conditioning systems which are destined to become more and more commonplace when the war is over.

Roof Insulation Pioneered by Johns-Manville

Johns-Manville, long a manufacturer of scientific insulation materials for home and industry, pioneered the development of roof insulation. And today Johns-Manville manufactures different kinds and different thicknesses of insulation to meet the requirements of almost every structure.

In addition, Johns-Manville engineers have made an exhaustive study of the application of insulation over the roof deck and under the built-up roof in order to seal it completely from moisture, and at the same time to isolate the effects of possible accidental damage and thus make repairs simple and inexpensive.



As a safeguard against extensive injury should the roofing felts ever become damaged, Johns-Manville recommends that the insulation be isolated into small units by a network of water-proof barriers, as shown here.

We believe that the combination of scientific J-M roof insulation and a Johns-Manville Asbestos Smooth-Surfaced Built-Up Roof provides the most satisfactory specification you can write. It protects buildings against heat and cold, saves fuel and provides better working conditions. It guards against condensation, roof-communicated fire, rot and decay. And, above all, it protects against the drying out action of the sun without the use of a heavy surfacing of slag or gravel. We shall be glad to send our latest built-up roof specifications or, on request, have an experienced roofing engineer consult with you. Write Johns-Manville, 22 E. 40th St., New York 16, N. Y.

JOHNS-MANVILLE JM PRODUCTS

Johns-Manville ASBESTOS BUILT-UP ROOFS

1. Sound construction and full value for the housing consumer.

2. A building industry that will be alert to new developments, new products and new materials which promise a better house at lower cost.

3. Channels of supply for building materials and equipment based on the most efficient methods of distribution at fair profits.

4. Local building codes and zoning ordinances aimed at true protection of public safety and on true advancement of community housing value.

5. Sound neighborhood planning which will provide good living environment for families and stability for home investments.

6. Sound financing for housing which will provide a safe and productive investment outlet for savings at conservative interest rates commensurate with safety of principal.

7. A financing system which will support the housing consumer by measures encouraging regular reduction of housing debt.

8. A housing industry that will offer steady employment at good wages for workers.

9. A prosperous building industry deriving fair profits from a large volume of business.

10. A stabilized industry that will contribute consistently to sustained high employment and sustained high production.

11. A housing supply in our cities and throughout the nation that will bear close relationship to the housing needs of citizens in all walks of life.

FPHA Region Abolished

The FPHA has announced the abolishment on August 1st of FPHA Region No. 7 with headquarters in Kansas City. The Region served Missouri, Kansas, Nebraska, Wyoming, Colorado and Utah. With its abolition, Missouri and Nebraska come under the jurisdiction of Region No. 6, headquarters at Chicago; Wyoming comes under Region No. 9, headquarters at Seattle, Wash.; Colorado will be handled by Region No. 8, headquarters at Ft. Worth, Texas; Utah by Region No. 10, headquarters at San Francisco.

Conference on Planning

The Massachusetts Institute of Technology announces that its eighth annual Conference on City and Regional Planning will be held from October 16 to 27, 1944. Sponsored jointly by the Institute and the American Society of Planning Officials, the conference will be open to men and women who have had practical experience in planning or in a related professional field, including planning technicians, members of state or municipal planning commissions and housing authorities, and staff members of engineering or public works departments.

Seminars will be held each morning and afternoon, beginning Monday, October 16, and will cover principles and techniques of planning and planning legislation and administration. Emphasis will be placed on technical and administrative procedures and the application of approved planning standards rather than on a generalized discussion of the various planning problems for which solutions are needed.

The seminars will be conducted by Professors Frederick J. Adams and Flavel Shurtleff, assisted by visiting lecturers on special topics.

For further information address

(Continued on page 128)

Albert Kahn Associated Engineers & Architects, Inc.
Were YOU annoyed by heating complaints last Winter?
BRRR
HEAT DOES NOT REACH WORKING ZONE
PHEW! IT'S HOT
UNCOMFORTABLE RADIANT HEAT
ASSEMBLY LINE
Z-Z-Z-Z-Z
SICKENING BLASTS OF HOT AIR
HOT
COLD
COLD INTAKE DRAFTS ON FEET HOT DRAFTS ON THE HEAD
TOO COLD
TOO HOT
SOME WORKERS TOO HOT WHILE OTHERS ARE TOO COLD
WING
REVOLVING UNIT HEATERS
UTILITY HEATERS
FLOODLIGHT HEATERS
VENTILATING FANS
WING

(Above) Installation of 63 Wing Revolving Unit Heaters in Plant of Automotive Appliance Manufacturer

Cross-sectional view of WING Revolving Unit Heaters, showing Motor, Fan, Heating Element and Revolving Discharge Outlets

The objectionable features of heating systems like those cartooned at the left are the cause of endless complaints.

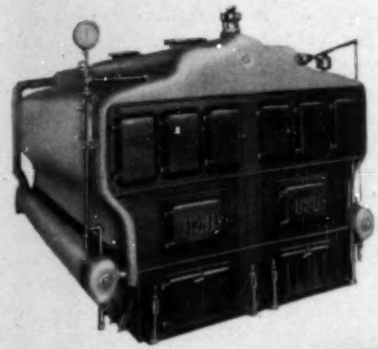
WING
Revolving **HEATERS**

ELIMINATE HOT SPOTS AND COLD SPOTS

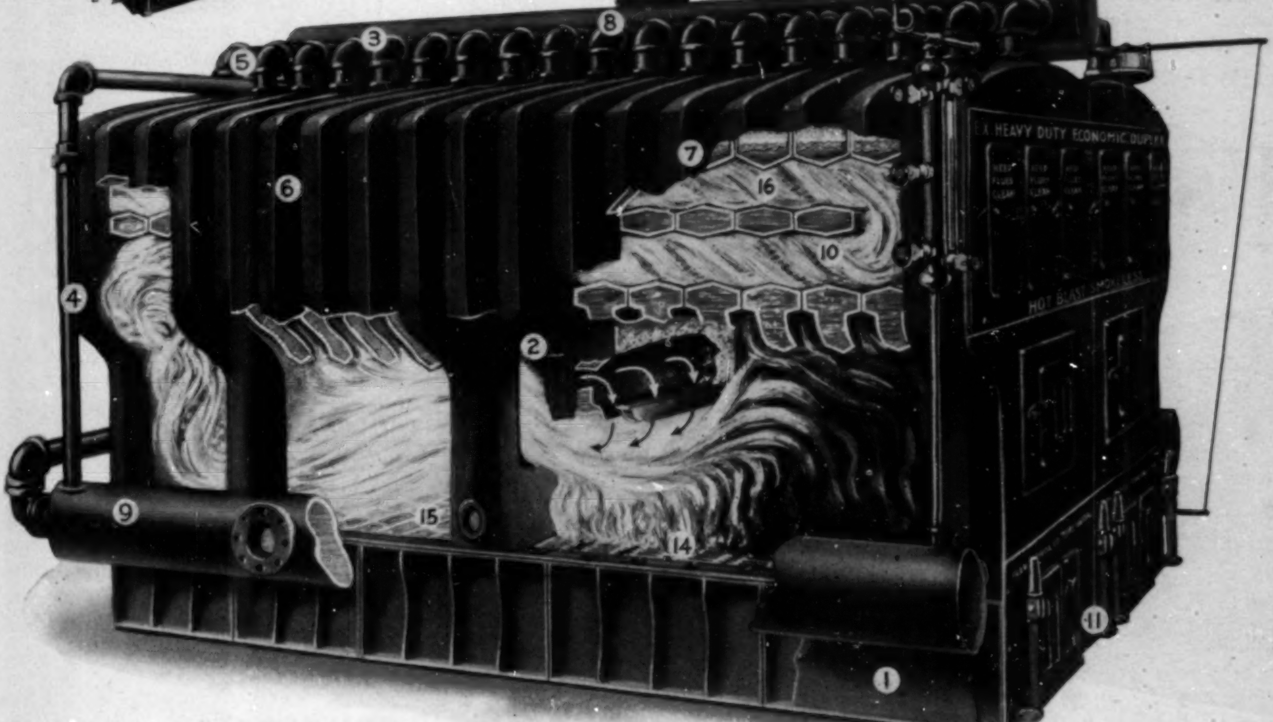
Located at roof or ceiling, they revolve slowly, projecting the heated air to the working level in moving streams which sweep slowly through 360 degrees, covering successively every direction instead of constantly in some one direction. The gentle air motion and the thorough coverage bring a sensation of fresh, live, invigorating warmth to workers. **And in the Summer, with the steam turned off, they create a delightful cooling effect that is equally effective in stimulating production.**

Write for Bulletin HR-3

L. J. Wing Mfg. Co.
151 W. 14th St. New York 11, N. Y.
Factories: Newark, N. J. Made in Canada at Montreal



Do all boilers look alike to you from the outside?



Well, look inside a PROX *and you'll see the difference*

In boiler construction and performance it is the inside story that counts most. Look at the list of Prox Construction features and you will know why Prox Boilers have performed so satisfactorily in thousands of installations during the past seventy years.

Prox Boilers, long the standard for heating boiler comparisons, have proven their efficiency and economy in every installation. Their construction overcomes all difficulties of installation pertaining to smoke outlets, flow, return, head room, accessibility, etc. Built for permanence with rust resisting cast iron. Prox Boilers provide complete adaptability with capacities from 400 to 25,000 square feet. Prox Duplex Header Design simplifies assembly and installation, insures continuous heat, provides dry steam to the mains.

Trouble free, efficient, economical boiler performance will be guaranteed for your buildings if you specify Prox Boilers. Write us for help in the solution of any of your heating problems.

PROX
ON THE BANKS OF THE WABASH — SINCE 1872
BOILERS
FRANK PROX COMPANY, INC. TERRE HAUTE, IND.

BEFORE SPECIFYING ANY BOILER CHECK THESE PROX ADVANTAGES:

1. Non-Corrosive cast iron construction for permanence.
2. Hot Blast Smokeless air intake supplies auxiliary oxygen for complete combustion . . . utilizes full heat value of fuel.
3. Positive Steam Separating Header assures dry steam.
4. Returns or bleeders carry back to boiler any water escaping with the steam.
5. Independent accessible connections guarantee continuous service by permitting any section to be plugged off while firing is continued.
6. Each section can be slipped out and replaced without disturbing other parts of the boiler.
7. Large water capacity prevents sections breaking through unsteady water line.
8. Single direct flow connection eliminates cost of header construction and saves head room.
9. Side Headers provide equalized circulation through boiler.
10. Spiralling action of hot gases in easily cleaned flues increases effectiveness of heating surfaces.
11. Four independent grate area controls make partial firing possible in mild weather.
12. Cast iron construction and independent connections assure safety by permitting expansion and contraction of all boiler parts.
13. No part too large to take through doorways.
14. Well proportioned fire box is short and wide for easy control of fuel bed.
15. Intense heat in secondary combustion space completely burns smoky, volatile gases.
16. Three layer fire travel affords full transmission of heat to water providing efficiency, economy, low stack temperature.

ADVANTAGES OF PROX BOILERS ARE ENJOYED BY THESE AND MANY OTHER HOSPITALS:

Woodrow Wilson General Hospital, Staunton, Va.
Good Samaritan Hospital, Vincennes, Ind.
U. S. General Hospital, Louisville, Ky.
Memorial Hospital, Owasso, Mich.
Walla Walla Hospital, Walla Walla, Wash.
Okmulgee General Hospital, Okmulgee, Okla.

Professor Frederick J. Adams, Division of City Planning, Massachusetts Institute of Technology, Cambridge 39, Mass. Applications should be received not later than October 2, 1944.

"MIRACLE" HOUSING?

A recent survey of consumer demands conducted by the National Association of Home Builders has prompted that organization to inaugurate a nation-wide campaign to destroy the illusion of the so-called "miracle house," which, the survey would indicate, a great many people expect to pop up the second the war is over.

The survey was conducted in Atlanta, Chicago, Columbus, Hartford, Houston, Minneapolis, Pittsburgh, Rochester and San Francisco. It was confined to the broad middle class with an average income of $3,027, and embraced the middle younger age bracket. Of the families interviewed, 32 per cent owned their homes and 68 per cent were non-owners, but 45 per cent of the total indicated that they expected to build or buy a home. The great majority, or 68 per cent, expected to build or buy from one to two years after the war.

More than half of those interviewed expected to get a six room house with two baths, replete with mechanical wonders. Yet they planned to pay an average of only $52 per month in financing the mortgage.

Complete air conditioning, electronic controls to simplify housekeeping, extensive use of plastics, movable partitions, outside walls which can be opened up on a garden or terrace in warm weather, rooms built as complete units which can be added or removed as desired—these were some of the features not only expected but demanded by the majority of the interviewees.

What the Association hopes to do in its newly inaugurated campaign is to destroy this alarming "miracle house" concept and to project in its place a forthright picture of the attractive, practical "home of tomorrow." What prospective home owners actually can expect, they feel, is: low, sweeping roof lines; more window area; attractive kitchens and bathrooms; appealing basements; and increased emphasis on size and charm of the living room at the expense of the dining room.

INDIANA'S NEW BUILDING CODE

Formal approval of general construction and electrical rules and regulations by Governor Henry F. Schricker and Attorney General James A. Emmert cleared the path for postwar construction in Indiana as far as building codes are concerned.

The new codes are the last of four drawn up by the Administrative Building Council of Indiana, created by a legislative act in 1923.

The general construction code is patterned after the Uniform Code of the Pacific Coast Building Officials Conference, now in use in more than 350 cities in 31 states, and in Hawaii and Canada.

Rules governing plumbing, and heating, ventilating and air conditioning were signed by the governor in May. Printing of all four is now in progress. The heating and ventilating code is reported to be the first adopted in the United States.

The fact that building regulations in Indiana were outmoded had been apparent to building industry members for several years. Tangible effort to

(Continued on page 130)

Use Barcol OVERdoors

...where Good Doors are Needed...

OVERdoors Electric Door Operators

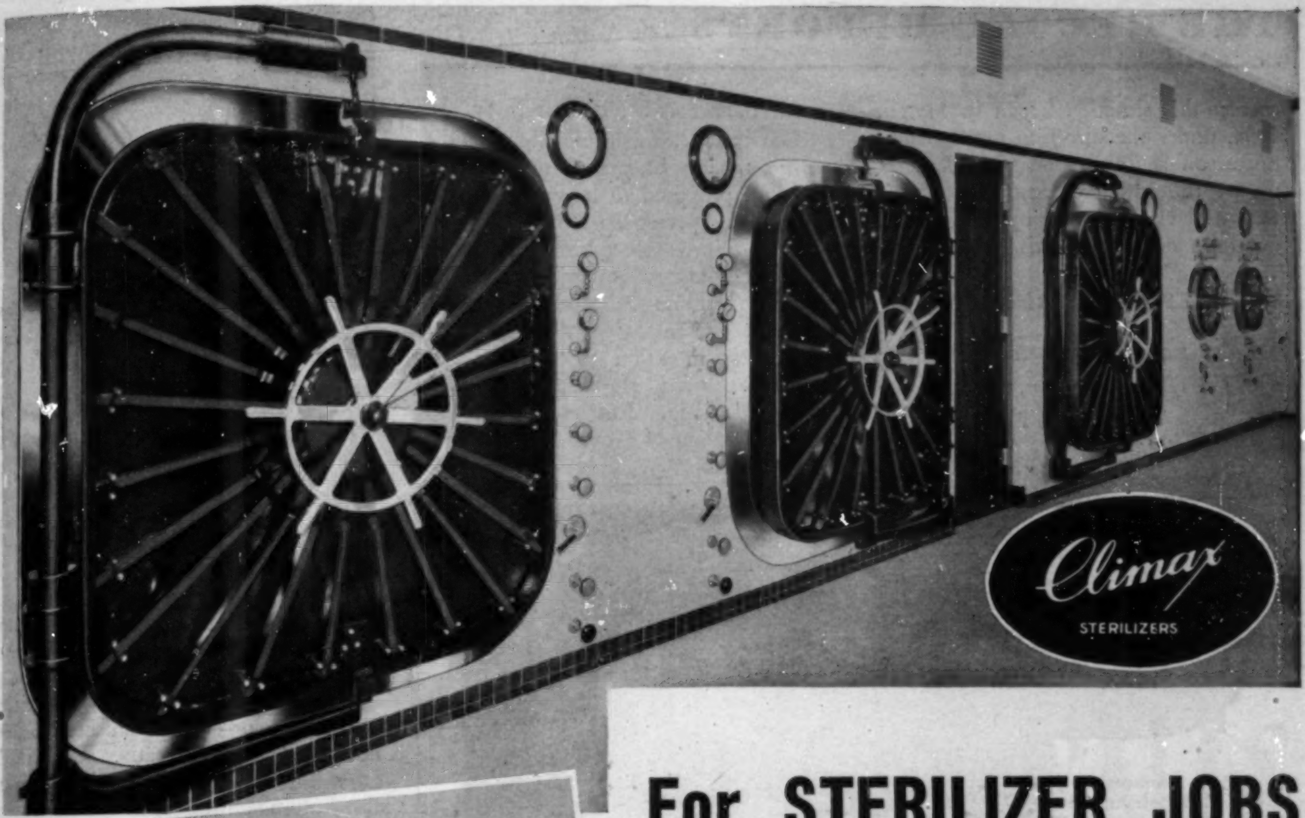
Check the advantages of the 4 outstanding features of Barcol OVERdoors — 1. Weathertight, rattleproof closing without sticking or binding. 2. Self-latching, with spring bolts which engage automatically on closing. 3. "Twin Torsion" balance springs that are safe and quiet with a neat, compact appearance. 4. Continuous vertical track brackets that are more rigid, and conceal and protect the cables. *Other doors have some of these features, but no other door has all of them.*

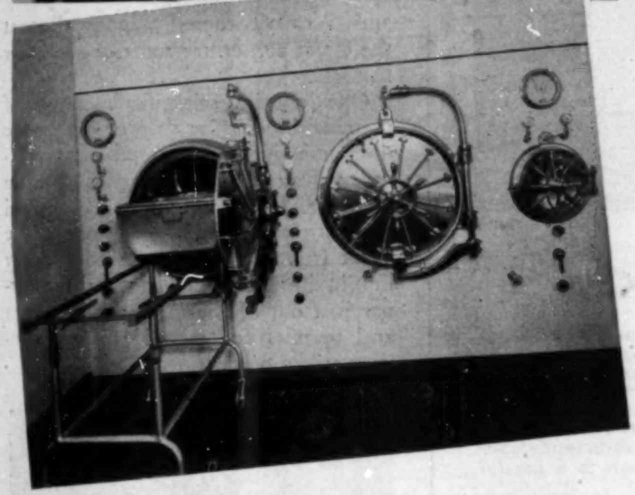
The pictures show a truck fleet garage with seven doors approximately 18 feet wide and 10 feet high. Barcol OVERdoor quality and features mean long and trouble-free life under severe service conditions.

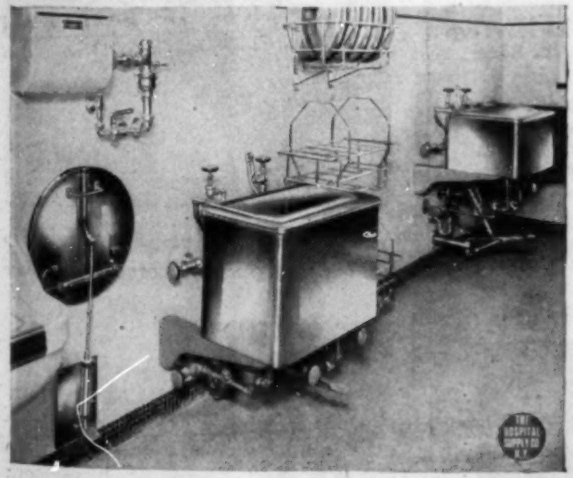
The Barcol OVERdoors on this fleet garage are chain-hoist operated. Note the neat, trim appearance of the overhead tracks and mechanism.

FACTORY-TRAINED SALES and SERVICE REPRESENTATIVES IN PRINCIPAL CITIES

BARBER-COLMAN COMPANY
102 MILL ST. • ROCKFORD, ILL.







Upper illustrations show Climax Central Sterilizer Installations.

Lower illustration shows a Utility Room with Orbit Bedpan Washers and Sterilizers — — — All planned with the cooperation of our Engineering Department.

For STERILIZER JOBS Call On The Men Who Know . . .

In planning for Sterilizer installations you will want to rely on the special knowledge of men long trained for such jobs.

For forty-five years, we have been manufacturing Climax Sterilizers. For forty-five years, our Engineering Department has worked successfully with Architects and Engineers in planning sterilizer installations for every requirement—from the world's largest Medical Centers to the smallest private hospitals.

To help you in your planning, we offer time-tested engineering service without cost or obligation to you. Just outline the particular installation problem you have—and our trained technicians will work out the solution.

THE HOSPITAL SUPPLY COMPANY

155 East 23rd Street **New York 10, N. Y.**

Since 1898, Manufacturers of Climax Sterilizers, Disinfectors, Hospital and Surgical Equipment, Instruments and Supplies. Catalog sent on request.

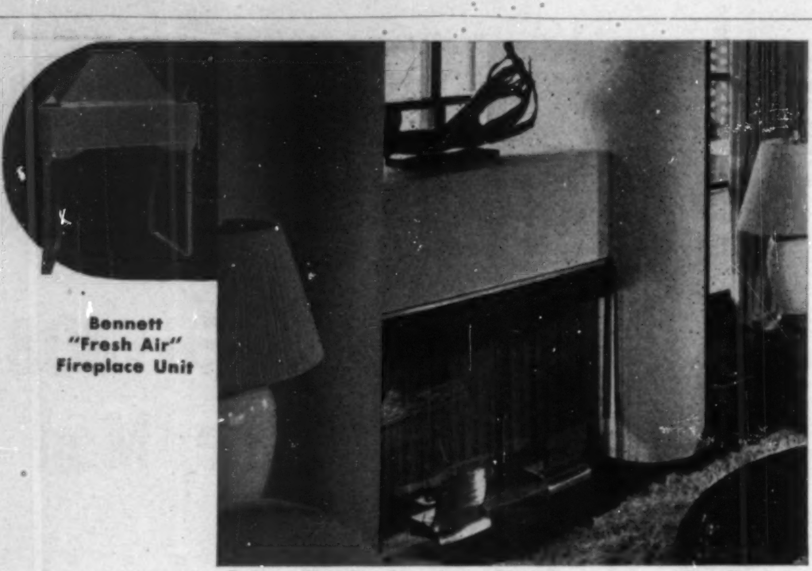
(Continued from page 128)

correct this situation began in March, 1938, under the direction of the Committee on Building Code Revisions set up by the Indiana Society of Architects and chairmanned by William C. McGuire of Indianapolis.

CONTEST RULES ANNOUNCED

Rules for the radio theater design contest sponsored by Station WGN, Chicago (Architectural Record, May, 1944, page 132), have been announced, and are available from WGN.

The contest, for the design of the studio theater only and not for the building proposed to house it, will be open to all persons, partnerships, corporations and associations everywhere, except employees of WGN and the Chicago Tribune and members of their families. Entrants are required to register their intention to compete not later than noon of Wednesday, November 1, 1944. Entries must be received by noon of November 15, 1944.



Bennett "Fresh Air" Fireplace Unit

Residence Mr. & Mrs. George Preston Marshall Photo Ezra Stoller

Avoid Vacuum — Smoke

When burning, a fireplace exhausts more than 200 cu. ft. of air per minute from the living quarters of a house. Especially in the tightly constructed "Home of Tomorrow," this creates a problem.

If tightly constructed, replacement air cannot enter around windows and door cracks from outdoors in sufficient quantities to supply the chimney draft. The result is a partial vacuum causing downdrafts and *smoke.*

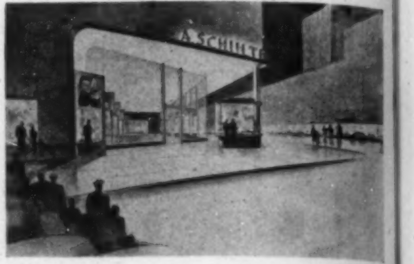
If sufficient replacement air can enter, the average temperature of the entire house is lowered, cold drafts sweep the floor and automatic furnace controls are out of balance.

The Bennett Fresh Air Fireplace solves these problems completely. It draws replacement air from outdoors through heating chambers and distributes it into the living quarters warm instead of cold. Result: no smoke, no uneven temperatures, no interference with heat controls and a net *gain* in evenly distributed warmth.

Bennett Fireplace Units are described in Sweet's. Bennett Catalog sent free on request. We shall be able to produce when you can build.

BENNETT-IRELAND • 844 MAPLE ST., NORWICH, N. Y.

BENNETT
Guaranteed
FIREPLACES



Retail store designed by Donald Deskey Associates for D. A. Schulte, Inc.

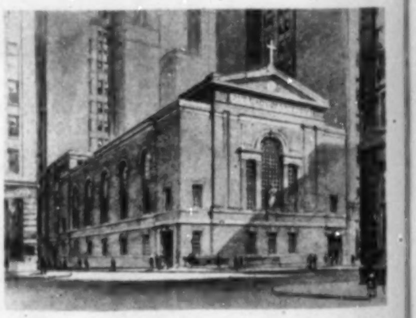
STORE DESIGN

One of the first "Stores of the Future" in the retail tobacco field to reach the blueprint stage has been designed by a group of industrial designers and engineers for D. A. Schulte, Inc.

The work of Donald Deskey Associates, the design was developed from data obtained by tests and experiments carried on in present Schulte stores.

A huge window reveals the entire store interior—and vanishes below floor level in good weather at the push of a button. Rotary display shelves, also button-controlled, indirect lighting and a catty-cornered window line at the street corner are some of the other features.

One of the scientific methods of merchandise display worked out by the designers is a "saw-tooth" arrangement of alcoves, providing added open visibility. The whole store is conceived as a display window along the entire street frontage. The recessed window line invites a short-cut around the corner just out of the main traffic stream and permits an "island" display window at the corner.



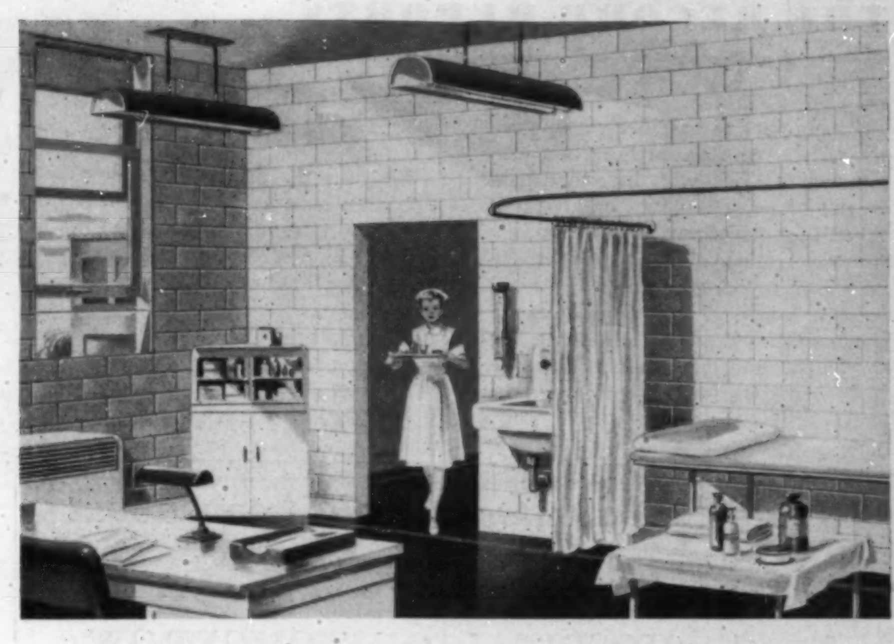
New church for downtown Manhattan, to be built as soon as conditions allow

NEW CHURCH

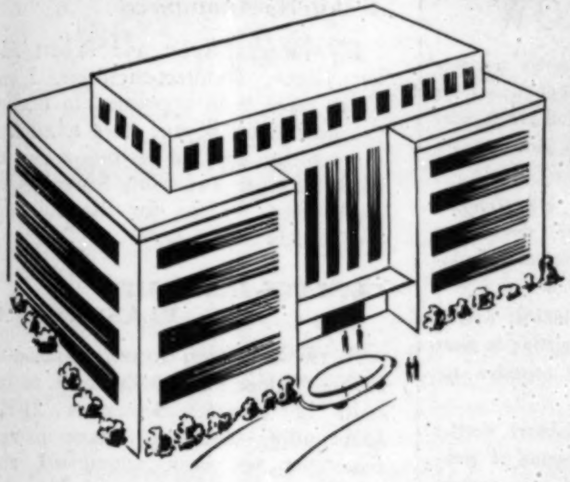
Construction of a new church in the heart of New York City's financial district will begin as soon as general conditions allow, the Roman Catholic Archdiocese of New York has announced. Eggers and Higgins are the architects for the proposed structure, to be known as Our Lady

(Continued on page 132)

Specify
AR-KE-TEX
CERAMIC GLAZED
STRUCTURAL TILE



WALL & FINISH
All-in-One!



HOSPITAL WALLS
of Permanent
SANITATION • ECONOMY
BEAUTY

THE *FIRST* COST . . . IS THE *LAST* COST!

HOSPITAL interiors demand sanitary wall surfaces which can be kept scrupulously clean. Ordinary construction materials require periodic painting and refinishing, greatly increasing maintenance costs. When hospital walls are built of AR-KE-TEX Ceramic Glazed Structural Tile no painting or refinishing is required. These walls remain clean and sanitary because their high-fired glaze will not permit bacteria adhesion or odor absorption . . . They will never crack, craze or peel . . . are not affected by moisture, acids, grease, oil, alkalis or any ordinary chemicals and are sound and fire resistant. The highly reflective qualities of AR-KE-TEX can be utilized to whatever extent desired.

Architects specify AR-KE-TEX Ceramic Glazed Structural Tile as the ideal wall for hospital operating and sterilizing rooms, laboratories, bathrooms, diet kitchens, pantries, corridors and laundries for interior construction. AR-KE-TEX is available NOW in more than a dozen colors with a full complement of shapes and fittings for any bearing or partition wall. Our new Circular Continuous Kiln is producing the finest AR-KE-TEX Ceramic Glazed Structural Tile in history—and in one-third the former time. With our "constant control" system we can give you definite shipping promises within twenty four hours after receipt of your inquiry.

BETTER WALLS • WITH AR-KE-TEX CERAMIC GLAZED STRUCTURAL TILE

AR-KE-TEX
ART-KERAMIC-TEXTURES

ARKETEX CERAMIC CORPORATION • BRAZIL, INDIANA

of Victory Church.

Preliminary plans call for a building of early American architecture, constructed of brick with limestone trim. It will be located at Pine and William Streets, in downtown Manhattan. Estimated seating capacity will be 600 on the main floor, and 350 in the gallery; a basement chapel will accommodate 400. In lieu of a separate rectory, a two-story penthouse will provide living quarters for the rector and his staff.

APPOINTMENTS

Commissioner of Housing

Herman T. Stichman, New York City, has been appointed by Governor Dewey as Commissioner of Housing in the Division of Housing, succeeding Ira S. Robbins, who has been Acting Commissioner since January, 1943. Mr. Robbins will continue with the Division of Housing as Deputy Commissioner.

Mr. Stichman is a graduate of Yale University and Yale Law School, and former Assistant United States Attorney for the Southern District of New York.

Larry Gordon photo

Raphael Malsin (center), president of Lane Bryant Inc., discusses plans for new store with Messrs. Kahn and Jacobs

Architects Announced

Ely Jacques Kahn and Robert Allen Jacobs, architect-engineers, New York, have been appointed to design the new Lane Bryant store scheduled for postwar erection on the corner of Fifth Avenue and 40th Street, New York City. Plans for the building are already under way.

CLIMATE INSTITUTE PLANS FORUM

A two-day open forum is planned by the Indoor Climate Institute, to be held in Detroit, September 21-22. Outstanding speakers, whose names have not yet been announced, are scheduled to highlight general assembly meetings, the banquet and group seminars. Following the forum, committees of I.C.I. and its membership will be coordinated into a program of research and promotion.

Arthur E. Schanuel has recently been appointed executive secretary of the I.C.I., and new offices have been taken at the Penobscot Building, Detroit.

COMMERCIAL CENTER

Modern living is keynoted in the architectural plans made for the commercial center to be built on the site of the Altgeld Gardens, the Chicago Housing Authority has announced.

Designed by George Fred Keck, the center is patterned to meet the everyday shopping needs of the 7,000 people expected to live in the community. Located in the center of the development, it is adjacent to the community center and administration building. An arcade will connect all the stores.

The shopping district will be a cooperative enterprise between public and

(Continued on page 134)

What the Architect should know about

STEAM KETTLES

for the HOSPITAL OF TOMORROW

Quantity cooking in the Hospital of Tomorrow will call for kitchen equipment especially designed to perform specific mass cooking operations with maximum speed and economy.

HUBBERT STEAM KETTLES are such equipment. They are specifically designed for high-speed, low-cost preparation of soups, stews, vegetables, etc.

Today's new industrial restaurants are the operating laboratories of mass feeding of tomorrow. Rapid service and rough use characterize these establishments, which serve as many as 15,000 people in less than two hours. For this type of service hundreds of Hubbert Seamless Steel Kettles are now in use. Designers and operators of these mass feeding units have chosen Hubbert Kettles because they possess these extraordinary features:

SEAMLESS DRAWN kettles are stronger. The walls are not stretched, thinned or weakened. Cannot develop pinholes. No leaks. No blow-ups. No contamination.

STAINLESS STEEL used in Hubbert Kettles —18-8—lasts a lifetime. No plating to wear off. Permanent immunity to corrosive action of heat.

SANITATION features of Hubbert Kettles are not found elsewhere. Cleaning of Hubbert Kettles is a simple and easy sanitary matter.

SAFETY measures taken to assure maximum usefulness of Hubbert Kettles are many. The most important one—they are seamless and have no welded seams to "blow up." Each kettle is thoroughly tested and fitted with a safety valve.

HEATING EFFICIENCY is assured by the inner wall of a Hubbert Kettle, which prevents hot spots, allows greater heating surface and produces quick heat transfer. 100 gallons of water can be boiled in 9 minutes.

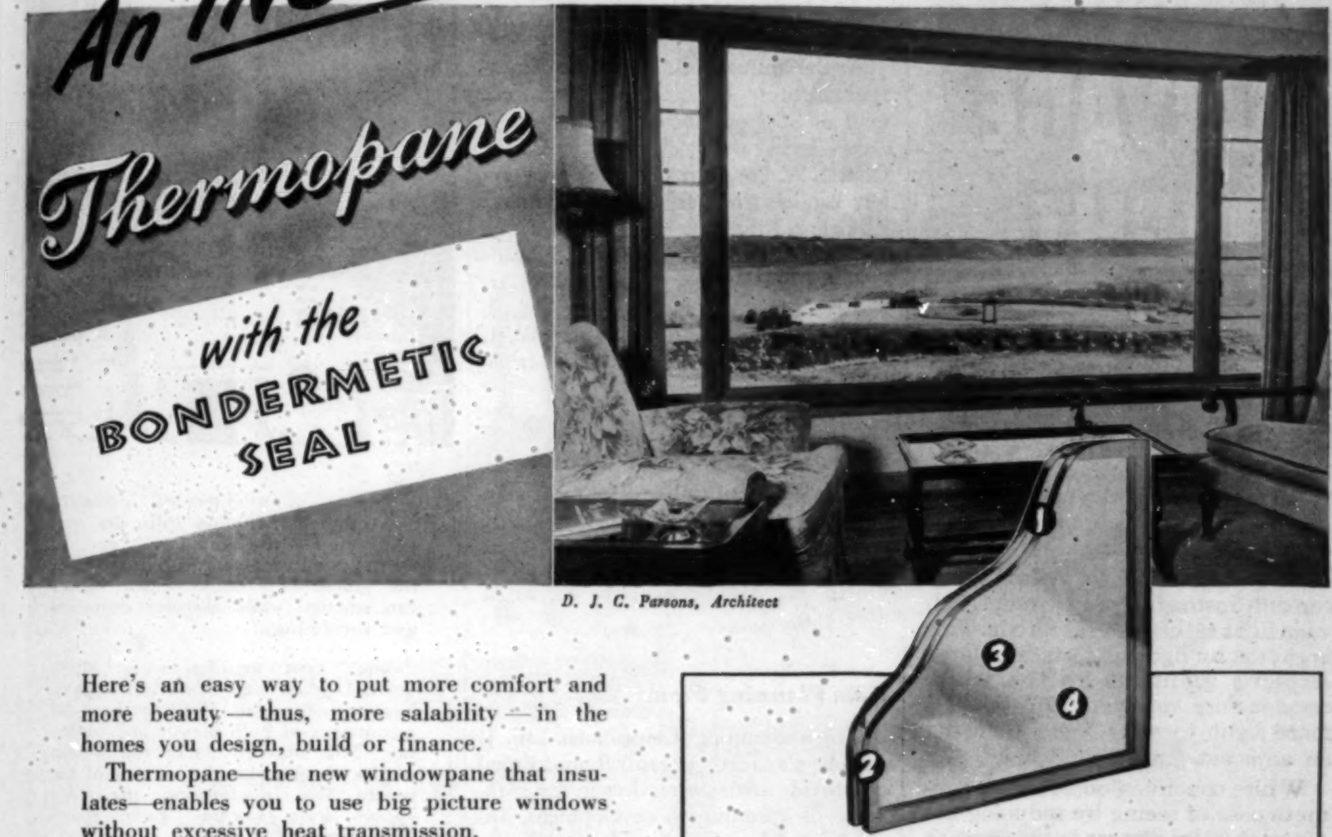
DURABILITY of Hubbert Kettles is universally recognized. Every Hubbert Seamless Drawn, Stainless Steel Kettle ever sold is in active use today.

Of course Hubbert Stainless Steel Kettles are off the market for the duration, but they will be available for the Hospital of Tomorrow. Meanwhile Hubbert VICTORY MODEL Stainless Clad Kettles are available on approved applications. Literature on Hubbert Victory Kettles may be obtained on request.

EVERY HUBBERT SEAMLESS DRAWN, STAINLESS STEEL KETTLE EVER SOLD IS IN ACTIVE DUTY TODAY

B. H. HUBBERT & SON, Inc.
1300 BLOCK S. PONCA ST.
BALTIMORE 24, MD.

NOW! An INSULATED Picture Window



D. J. C. Parsons, Architect

Here's an easy way to put more comfort and more beauty — thus, more salability — in the homes you design, build or finance.

Thermopane—the new windowpane that insulates—enables you to use big picture windows without excessive heat transmission.

Thermopane is an important aid to *Daylight Engineering* because it makes the provision of highly desired large glass areas thoroughly practical whatever the climate. It's a new, efficient feature that home buyers will recognize as a forward step in house construction.

This insulating windowpane fits into a modified single sash, just like an ordinary single pane of glass—except that the rabbeting will be grooved somewhat wider to accommodate Thermopane's slightly greater thickness.

Thermopane's efficiency is explained in the four important features shown at the right. We have prepared a book which gives further facts—such as sizes, thicknesses, types of glass, and other important matters pertaining to the use of Thermopane. Write now for your copy. Libbey·Owens·Ford Glass Company, 1084 Nicholas Building, Toledo 3, Ohio.

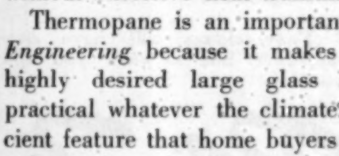
4 important features of Thermopane

❶ **INSULATING AIR SPACE.** The layer of air inside the Thermopane units is scientifically cleaned, dried and hermetically-sealed at the factory. This sealed-in air gives Thermopane its high insulating efficiency.

❷ **BONDERMETIC SEAL.** This patented, weatherproof, metal-to-glass seal bonds the two panes of glass into one unit to prevent dirt and moisture from entering the air space.

❸ **CLEAR VISION.** The dry air is sealed in with the patented bond to prevent frost or condensation from forming on the inner surfaces of the panes of glass.

❹ **ONLY TWO SURFACES TO CLEAN.** The glass surfaces inside a unit are specially cleaned at the factory . . . and stay clean!



LIBBEY·OWENS·FORD
a Great Name in **GLASS**

FLOORS that SALVAGE LIGHT

Light-Reflecting Floors made with Atlas White cement help make lighting systems more effective

We buy light to make seeing easier; yet much of its effectiveness is wasted by dark colored floors, just as by dark walls and ceilings.

Floors made with Atlas *White* cement, instead of gray cement, salvage light rather than absorb it. This is shown by lighting tests in a large airplane plant where the white cement floor reflected 20% to 60% more light to work areas than did an adjacent gray cement floor.

White concrete floors further promote ease of seeing by reducing the contrast in brightness between work areas and surroundings. They cut down shadows and dark areas and reduce eyestrain—a cause of lowered production, waste and accidents.

Whether in conversion or new construction, light-reflecting floors can help make lighting more effective. Send for the booklet, "Light from Floors," containing test data, cost and recommended installation and maintenance practice. Write: Atlas White Bureau, Universal Atlas Cement Company (United States Steel Corporation Subsidiary), Chrysler Building, New York 17, N. Y.

HOW ABOUT MAINTENANCE?

Experience shows white cement floors are easy to clean, easy to keep clean, and retain their reflection advantage. Maintenance is simple—frequent sweeping, occasional damp mopping, periodic scrubbing.

AR-F-28

ATLAS WHITE CEMENT

For Light-Reflecting Floors

(*Continued from page 132*)

private business interests. The stores will be operated by the Thaddeus Stevens Land Trust.

A.I.E.E. ELECTS

At the annual meeting of the American Institute of Electrical Engineers held in St. Louis recently, the following officers were elected: president, Charles A. Powel, manager, Headquarters Engineering Depts., Westinghouse Electric & Mfg. Co.; vice presidents, R. T. Henry, J. F. Fairman, M. S. Coover, R. W. Warner, and C. B. Carpenter; directors, P. L. Alger, M. J. McHenry, and D. A. Quarles. W. I. Slichter was reelected national treasurer.

NEW OFFICES

Sydne Schleman

Sydne Schleman, architect, has announced reopening of his office at 59 North St., Middletown, N. Y., as of July 15th.

New Planning Firm

Town Planning Consultants Ltd. is a new Canadian organization formed to provide advisory services in the planning of community development. Incorporated under the laws of the Dominion of Canada, the company has established offices at 1319 Canadian Bank of Commerce Bldg., Toronto 1, Ont.

Retained as advisers to the firm are E. R. Arthur, A.R.I.B.A., architect; E. G. Faludi, city planning consultant; Gordon S. Adamson, architect; H. B. Dunington-Grubb, landscape architect and site planner; Morley Lazier, consulting industrial and mechanical engineer; Alan Van Every, solicitor; Anthony Adamson, architect and writer on town planning, and president of the new firm.

COMPETITION CLOSING

The $2000 war bond competition sponsored by Speakman Company, Wilmington, Del., in celebration of its 75th anniversary, will close on August 31.

Open to architects and engineers, plumbers, wholesale distributors and distributors' salesmen, the contest offers a $500 war bond for the best answer in each group on specific questions pertaining to Speakman showers and fixtures.

In the Homes of Tomorrow

TODAY'S architectural planning for tomorrow's homes calls for *spot ventilation* — the discharge of unwanted odors at their origin—before the grease and smoke laden vapors can smudge walls, discolor draperies and furnishings.

Such spot ventilation is 100% assured when you specify Blo-Fans, because only the Blo-Fan has the advantages of both blower and breeze fan. The Blo-Fan packs the wallop of the blower with the volume of the breeze fan, discharging the odor vapors from kitchen, game room, bath, laundry.

Your clients will have cleaner, healthier homes when you specify

Blo-Fan

"SPOT VENTILATION"

See our catalog in 1944 Sweet's

OR WRITE

BUY U.S. WAR BONDS

Now!

PRYNE & CO., INC.

1245 E. 33rd ST. LOS ANGELES

Branches (to be reestablished after war)

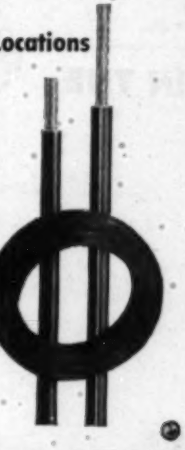
SAN FRANCISCO · SEATTLE · CHICAGO · NEW YORK

G-E Wiring Material News

Flamenol Building Wire

Type SNW **for Wet Locations**

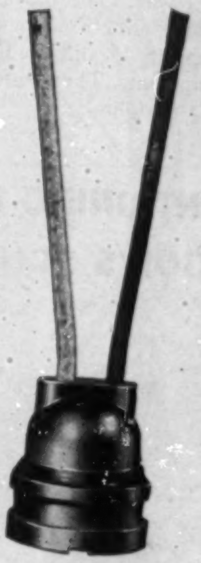
Type SN **for Dry Locations**



Both types are approved by the Underwriters'. Both are ideal for branch circuits, feeders or special wiring. Their thermo-plastic insulation has long life, is flame retarding and resistant to oils, acids, etc. Type SNW insulation, in addition, has low moisture absorption. Both these wires are small in diameter, too, permitting more conductors to be used in conduits.

NEW G-E Weatherproof Sockets

Specify these sturdy weatherproof sockets for new industrial plants, factory remodelling, shipyards and outdoor construction jobs of all kinds. They are made of a tough compound . . . resist breakage . . . have an improved waterproof seal around the lead-in wires. This seal is made with a heat-resisting wax in a liquid state poured into the top of the socket. It covers the whole top of the screw shell and lead-in wire assembly.

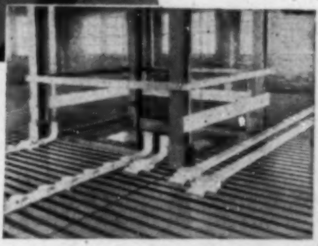


GE3482

UNDERFLOOR ELECTRICAL DISTRIBUTION SYSTEMS

G-E Fiberduct and G-E Q-Floor Wiring—two different systems for different floors—provide complete electrical flexibility in offices, factories, shops, etc. Outlets can be opened at any time.

Specify G-E Fiberduct with masonary and wood type construction.



Specify G-E Q-Floor Wiring with Robertson Q-Floors

Mail This Coupon

Send this coupon for further information on G-E products described on this page.

General Electric Company
Section CDW-847-44, Appliance and Merchandise Dept.
Bridgeport, Conn.

Sirs: Please send me information on:

- ( ) Flamenol Building Wire
- ( ) Weatherproof Sockets, GE3482
- ( ) G-E Fiberduct
- ( ) G-E Q-Floor Wiring

Name..........

Address..........

City.......... State..........

Hear the General Electric radio programs: "The G-E All Girl Orchestra" Sunday 10 P.M. EWT, NBC. "The World Today", news every weekday 6:45 P.M. EWT, CBS

BUY WAR BONDS AND KEEP THEM

GENERAL ELECTRIC

FOR BETTER BUILDING (Continued from page 44)

lines may also be incorporated in the same drawing where desired by applying a second chemical with a brush.

Either pen or pencil may be used on the vellum, and the final result is white, black and two tones of gray. Copies of tracings made on the vellum are made in the usual way. The drawings may be reproduced either photographically or in blueprint, Ozalid or Black-and-White equipment. The Craftint Mfg. Co., Cleveland, Ohio.

PRINT DRYERS

A compact, electrically heated dryer for "over-all drying" of blueprints or black and white prints comes in two sizes, handling prints of 26 and 44 in. widths. Known as the "B-8" dryer, the new unit is equipped with variable speed drive motors and controllers which permit instantaneous speed changes over a range of 6 in. to 3½ ft. a minute. Current consumption is small: 14 amperes on 110 volts, 7 amperes on 220 volts for the 26 in. dryer; 23 amperes on 110 volts, 12 amperes on 220 volts for the larger dryer.

Framework is pressed steel; specially woven seamless band; seamless copper revolving drum can be chromium plated. Peck and Harvey, Chicago.

Plastic mat for use in place of rubber

PLASTIC MAT

A new type of matting for use in many places where rubber matting was formerly used is *Ameritred*, a solid plastic friction type mat made by firmly binding friction compound together by a plastic. Said to lie flat and to afford a non-slip surface, the matting is jet black, and comes in 29 by 63 by 9/64 in. sheets, that can be trimmed to fit smaller or odd shaped areas. American Mat Corp., 1791 Adams St., Toledo 2, Ohio.

WATERTIGHT CONDUIT

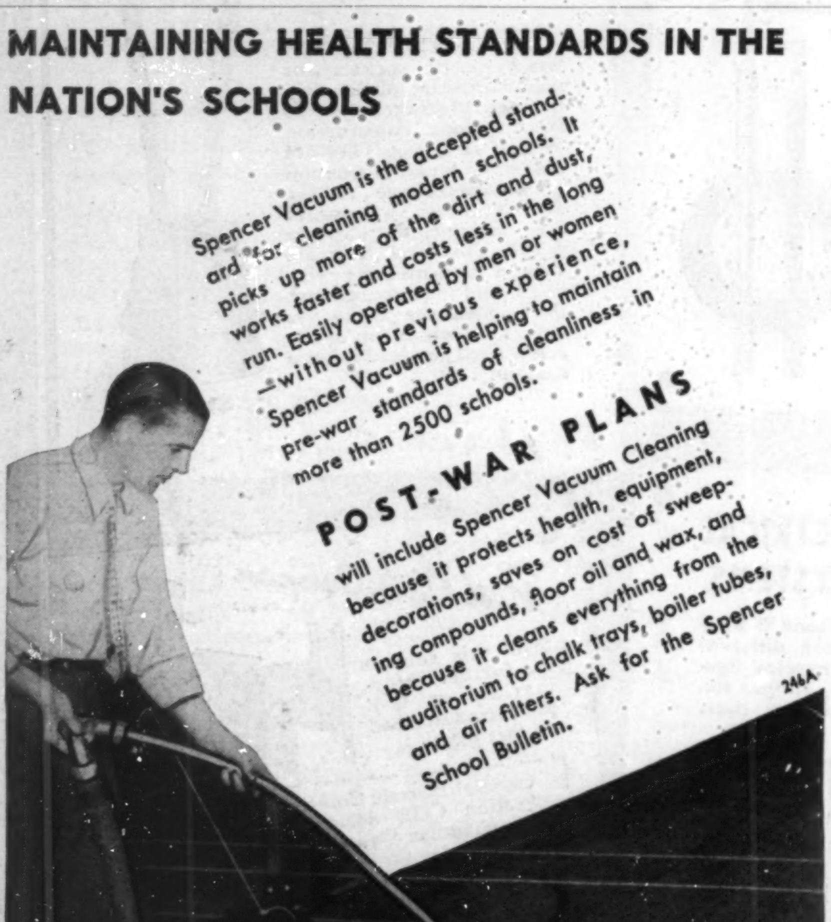
Helical corrugated conduit housing for Ric-wiL Prefabricated Insulated Pipe Units is now furnished with a reinforcing full welded lock seam extending spirally the entire length of each section. Automatic machine weld is made at the factory before galvanizing, assuring a permanently pressure tight, waterproof structure. Sections are 21 ft. long, completely fabricated with pipe or pipes as specified, insulation and aligning pipe supports. The Ric-wiL Co., 1572 Union Commerce Bldg., Cleveland, Ohio.

WORM GEAR REDUCTION UNIT

Newly announced is the *Speedaire* Worm Gear Reduction Unit, incorporating a fan cooling system which permits a pronounced reduction in size of the unit required for a given HP output. The basis of the cooling system is a new type of double wall construction, which provides an air passage completely enveloping the oil reservoir in which the gear operates. The inner housing wall forming the oil reservoir is deeply finned on the air side, resulting in a marked increase in heat-dissipating surface.

An exhaust fan located on the coupling end of the worm shaft draws air at

(Continued on page 138)



MAINTAINING HEALTH STANDARDS IN THE NATION'S SCHOOLS

Spencer Vacuum is the accepted standard for cleaning modern schools. It picks up more of the dirt and dust, works faster and costs less in the long run. Easily operated by men or women—without previous experience, Spencer Vacuum is helping to maintain pre-war standards of cleanliness in more than 2500 schools.

POST-WAR PLANS will include Spencer Vacuum Cleaning because it protects health, equipment, decorations, saves on cost of sweeping compounds, floor oil and wax, and because it cleans everything from the auditorium to chalk trays, boiler tubes, and air filters. Ask for the Spencer School Bulletin.

246A

SPENCER VACUUM CLEANING
HARTFORD

THE SPENCER TURBINE COMPANY, HARTFORD, CONN.

You "build in" air-conditioning

Why not specify a built-in sound system?

Factories, hotels, office buildings, auditoriums, hospitals and schools have proved that communication through sound systems is so important that nearly every modern building should have provision for built-in sound facilities. This wide acceptance indicates that it is wise to provide for a *built-in* sound system in the design, rather than to add it after the building has been completed.

The sound system is no longer an accessory. Like the other built-in utilities—plumbing, heating, lighting, air-conditioning, the sound system developed logically; first the experimental stage, then portable or added-on sound equipment, and now—modern *built-in* sound.

It *costs less* to build in a sound system than to add it later.

See our catalogue in SWEET'S. If you need assistance in designing adequate sound systems into your projects, call on RCA sound specialists or write Radio Corporation of America, Sound and Picture Section (70-82), Camden, N.J.

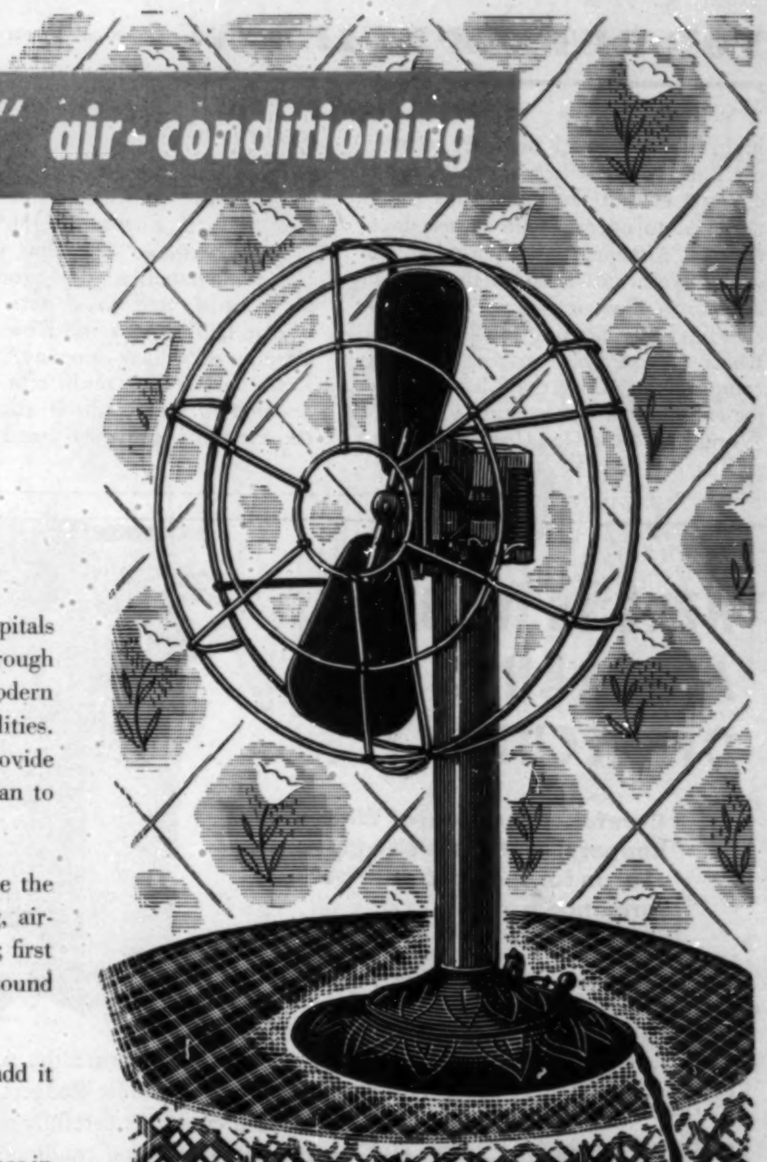
RCA SOUND SYSTEMS

RCA

RADIO CORPORATION OF AMERICA

RCA VICTOR DIVISION • CAMDEN, N. J.

LEADS THE WAY.. *In Radio.. Television.. Tubes.. Phonographs.. Records.. Electronics*



FOR BETTER BUILDING

(Continued from page 136)

high velocity through the space between the housing walls from a grille at the opposite end of the unit. This fan is designed to operate with either direction of rotation. The effect of the double wall construction is to maintain a uniform flow of cooling air against the fins and housing wall over the whole oil reservoir surface, and thus completely to utilize the full heat transfer efficiency of the system. Cleveland Worm and Gear Co., Cleveland, Ohio.

SILICONES

Sand, brine, coal and oil are providing the basic elements for the chemical manufacture of *silicones,* the Corning Glass Works and The Dow Chemical Co. have announced. The products will be manufactured in a new plant at Midland, Mich., by the Dow Corning Corp., a subsidiary company.

Silicones are the result of a century's research to utilize silicon and oxygen, the elements of which sand is composed, in the production of new temperature-resistant materials, W. R. Collings, vice president and general manager of Dow Corning explains. "Among the most important of these silicone materials," he said, "are high temperature insulating resins, but silicones can be produced either as solids or liquids in an infinite variety of forms. Silicone chemistry makes possible the building of lighter and better electrical equipment . . ." He cited particularly the success of engineers of Westinghouse Electric & Mfg. Co., who cooperated closely with Dow Corning in the testing of the materials, in redesigning a three horsepower motor "to provide an output of ten horsepower by using high temperature resistant silicones for the electrical insulation."

FIBER TREATMENT

Several new developments in the chemical treatment of natural fibers have been announced by the Monsanto Chemical Company, St. Louis. Included among them:

1. Treatment of wool to prevent shrinking.
2. Treatment of serges to eliminate the shine from the cloth.
3. Treatment of wool for durable creasing under steam and heat.
4. Treatment of fibers to prevent slipping.

These developments are based on new techniques of treating either the surface or the heart of fibers to produce the desired effect without, it is claimed, in any way changing the feel or texture of the material. In some cases the treatment involves the deposit of a submicroscopic film of plastics.

PHOSPHORESCENT PIGMENT

A new phosphorescent pigment, CAS-SrS-2470, is said to emit an unusually bright phosphorescent afterglow for an exceptionally long period of time. Although specifically intended for use in such wartime applications as phosphorescent paints, marking tapes and decalcomanias, it is expected to find many peacetime uses, among them diffusers for lighting fixtures, furniture edging and trim, lamp bases and shades, decorative textiles and murals, etc. The New Jersey Zinc Sales Co.

REDWOOD SEASONING

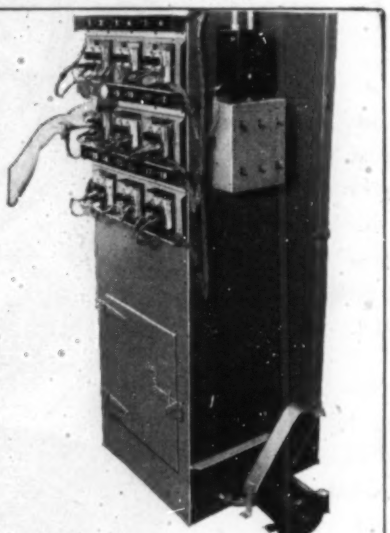
Research sponsored by the California Redwood lumber industry for means of controlling seasoning defects has borne fruit in form of uniform schedules for relieving casehardening stresses in kiln-dried Redwood lumber.

The investigation was inaugurated early this year through the setting up of a research group, the Redwood Seasoning Committee, composed of kiln

(Continued on page 140)

HERE IS YOUR ASSURANCE OF ACCURACY

Careful calibration of White-Rodgers Controls is one more reason for their accurate performance.



8 EXCLUSIVE FEATURES OF WHITE-RODGERS HYDRAULIC-ACTION TEMPERATURE CONTROLS

1. May be mounted at any angle or position, above, below or on level with control point.
2. Hydraulic-Action Principle incorporating solid-liquid filled bulb and capillary provides expansion force comparable to that of a metal bar.
3. Diaphragm motion uniform per degree of temperature change.
4. Power of solid-liquid charge permits unusually sturdy switch construction resulting in positive contact closure.
5. Heavier, longer-wearing parts are possible because of unlimited power.
6. Dials are evenly and accurately calibrated over their entire range because of straight-line expansion.
7. Controls with remote bulb and capillary are not sensitive to change in room temperature. Accuracy of control is not affected by temperature changes in surrounding area.
8. Not affected by atmospheric pressure. Works accurately at sea level or in the stratosphere without compensation or adjustment.

As a final test to insure the accurate performance of White-Rodgers products, each control is carefully checked under actual working conditions. For example, the fan and limit controls shown here are being adjusted while installed on equipment simulating actual furnace conditions. Thus accurate calibration and positive differential setting is assured.

These tests, and others like them, have been designed to provide accurate temperature control for you and to make the name White-Rodgers synonymous with *dependability* in the control field.

HYDRAULIC ACTION CONTROL

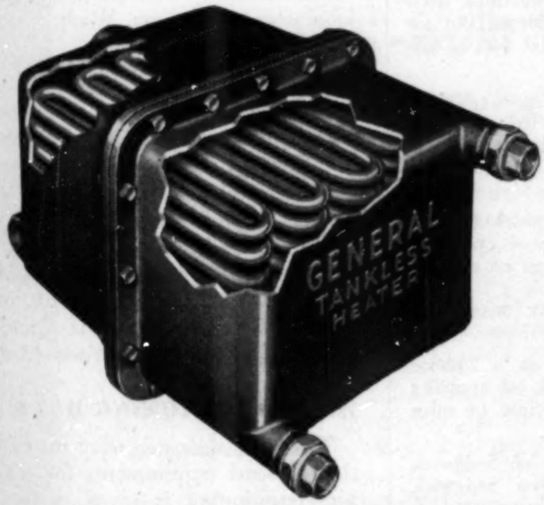
Fuel-Saving Starts With CONTROL

WHITE-RODGERS ELECTRIC CO.

1202H Cass Ave. St. Louis, Mo.

Controls for Refrigeration • Heating • Air Conditioning

There'll still be hot water for Junior... with a GENERAL Tankless Heater



(**UNTIL VICTORY** – a major part of our production is precision war work... torpedo and bomb parts, fuse setters, special Navy water heaters.)

Whether there's a regular morning line-up, or just a demand for hot water from several sources at once, you assure constant hot water in the home by installing the *GENERAL* Tankless Heater.

Compact, self-contained *GENERAL* Tankless Heaters cost less to install and take less space than storage tank systems . . . yet supply 3½ to 35 gallons of piping hot water every minute – all day! They hook up directly with any automatically-fired boiler and deliver a continuous supply of sediment-free hot water from seamless copper tubing.

To provide "unlimited hot water" the modern, money-saving way, you can count on the *GENERAL* Tankless Heater when you build your "homes of tomorrow". Write for complete Catalog 15. General Fittings Company, Department C, 123 Georgia Avenue, Providence 5, Rhode Island.

GENERAL

TANKLESS WATER HEATERS

Also Tank-Type Water Heaters • Thermostatic Mixing Valves
Water-hammer Silencers • Coil-heated Tanks
Live-Steam Heaters • Pipe Unions

FOR BETTER BUILDING

(Continued from page 138)

operators at member lumber mills. A progress report just made indicates that in the reconditioning of 1-in. kiln dried Redwood lumber, a temperature of 170° F., with relatively high humidities, will entirely relieve casehardening stresses within 24 hours.

NEW STANDARD

Printed copies of the new mineral wool standard for high temperature installations are now available. Entitled "Mineral Wool: Blankets, Blocks, Insulating Cement, and Pipe Insulation for Heated Industrial Equipment, Commercial Standard CS117-44," it has been effective since May 25, 1944.

The standard establishes minimum specifications for insulating heated surfaces with mineral wool products and provides a standard basis for certifying quality of material and installation. It also lists the recommended minimum insulation thickness required for various operating temperatures and recommended methods of product installation.

PLUMBING CODE

The American Society of Mechanical Engineers subgroup which has been at work on the development of an American Standard Plumbing Code has completed a tentative draft of the remaining eight sections of the proposed code, A40.

The new sections include one on definitions and another on inspection and tests. The complete code consists of 15 sections, and will be presented to the American Standards Association for approval as soon as it has been finally completed and approved by the ASME group.

PLYWOOD OUTLOOK

The Douglas Fir Plywood Association is making large-scale plans for postwar activity, and the outlook is good. At a recent business session several significant developments were disclosed, among them: (1) plywood manufacturers have acquired sizable stands of timber as sources of raw materials; (2) they have established a research foundation to develop new wood products separate and apart from lumber, plywood and pulp.

The new experimental institute, Plywood Research Foundation, will have a laboratory at Tacoma, Wash.

FUEL CONSERVATION

As a contribution to the government's fuel conservation program, the Industrial Mineral Wool Institute has reprinted the U. S. Bureau of Mines booklet, "Industrial Insulation with Mineral Products." A free copy will be supplied upon request, made on company letterhead stationery, to the Industrial Mineral Wool Institute, 441 Lexington Ave., New York 17.

AIR CONDITIONING DATA

The basic data necessary for calculation of load requirements for comfort air conditioning is given in Part IV of the 4th edition of the Engineering Standards of the Heating, Piping and Air Conditioning Contractors National Association.

The pamphlet contains the definitions of terms used in discussing air conditioning and examples showing the application of psychrometric relations, and also showing the method of calculating the load for comfort air conditioning. Charts and tables give the necessary data on which these calculations are based. Copies can be obtained from the Association, Room 1401, 1250 Sixth Ave., New York 20, at $1.00 per copy.

MR. ARCHITECT
POSTWAR STYLE

Postwar planning architects and engineers are running smack into two perplexing problems.

The first is—*what can I do to keep my client's costs down despite the high cost of labor and material?*

The second is—*how can I make my plans so that my client will maintain high operating efficiency while reducing costs?*

When it is a question of proper vertical transportation we think Roto Drive can help solve these problems. But we don't ask you to take our word for it. We don't expect you to.

We hope, instead, that you're skeptical—that you ask for proof of Roto Drive's adaptability and performance. We hope you will want to see how Roto Drive can help solve cost reduction problems.

Roto Drive is an exclusive Sedgwick development. It is a simple principle of operation based on the controlled movement of an endless chain. Because it is so simple it is adaptable and can be applied to many "man" handling and materials handling problems.

Right now we are working on a 24-hour schedule, doing a 'round-the-clock job applying the Sedgwick Roto Drive principle to solve problems for our fighting Navy.

You'll find Roto Drive in use on Sedgwick aircraft elevators on carriers—on Sedgwick continuous-feed ammunition hoists—on between-deck elevators and galley Roto-Waiters.

So send for a Sedgwick engineer. We think we can prove that Roto Drive will do everything we say it will—and more. We think you'll be convinced that Roto Drive can help your client reduce costs by helping move men, material and merchandise better and faster.

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Sedgwick MACHINE WORKS, INC.
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"O.K. SARGE!"

FRINK-built frames help army radios over the rough spots

Radio apparatus going forward with the U. S. Army must travel over some mighty rough terrain. Trucks equipped with transmitters and receiving sets are provided with special frames to which the radio instruments are attached. Thus these delicate pieces of machinery are held stationary and are protected against the banging and bumping of uneven ground.

Many of the sturdy radio frames used in U. S. Army trucks are made by Frink. The Frink Corporation has specialized in precision engineering and manufacturing for 87 years. During that time the name Frink has become synonymous with quality and skill in the lighting industry.

Frink was instrumental in developing Incandescent lighting in the days when that method of illumination was considered revolutionary. Likewise The Frink Corporation has pioneered in the development of Fluorescent lighting. LINOLITE, the famous "engineered for vision" Fluorescent equipment, is a product of Frink designing and manufacturing skill. LINOLITE is now giving efficient and profitable service in many of America's foremost factories, stores and banks.

Today Frink is heavily engaged in war production. Tomorrow Frink will resume the designing and manufacturing of the high-quality lighting equipment that has gained such an enviable reputation in the industry.

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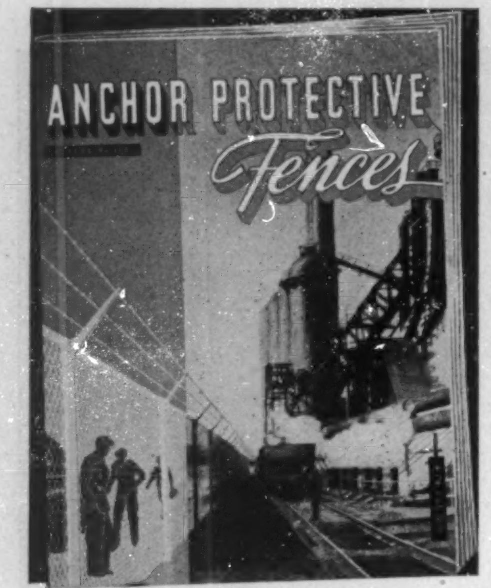
WE ARE PROUD OF THAT RECORD. LET'S ALL BUY WAR BONDS!



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REQUIRED READING

(Continued from page 32)

stitute Plan, representing chiefly the viewpoint of the National Association of Real Estate Boards; and the Federal Housing Administration's proposal.

Federal and state legislation in general and California legislation in particular are discussed in some detail, and a list of recommendations is included. The total is a concise summary of the legal aspects of the whole urban redevelopment problem.

ST. LOUIS

Plan for Public Recreational Areas, St. Louis, Mo. City Plan Commission, 1944. 8¾ by 11 in. 39 pp. illus.

Here is a fine presentation of one of the most important aspects of city planning—one which may not concern the architect quite so directly as do other aspects, perhaps, and one, also, which the architect probably knows least about.

Consisting largely of exceptionally clear maps, this booklet graphically tells the story of the recreational picture in St. Louis. Some of the findings of the Commission are startling in their implications. For instance: "The total park area [in St. Louis] should be increased by 165 per cent." "At least 30 more neighborhood parks with a minimum area of 20 acres each are needed." "Seventy per cent of the city's residential neighborhoods need community centers."

The chances are that similar conditions would be found in many another city if a similar study were made.

PERIODICAL LITERATURE

SELF-LIQUIDATING SLUM CLEARANCE

Engineering News-Record, New York 18 (330 W. 42 St.), June 29, 1944, pp. 100-103. illus.

A highly interesting addition to the "It-can-be-done" philosophy of Mr. Henry Kaiser is the plan for Laredo, Texas, proposed by H. B. Zachry, Laredo contractor.

In brief this plan consists of replacing the slums of the Mexican section of the city with 2,500 modern, masonry single-family houses, to be owned and occupied by the present lot-owners of the district. The idea is for the city to condemn all property in the 600 acres, with the exception of churches and an existing USHA housing project. Present owners would forfeit a quarter of their land, the land thus acquired by the city going for

(Continued on page 144)

A. Ernest D'Ambly, Consulting Engineer, Philadelphia, Pa. Member A.S.H. & V.E. Studied Mechanical Engineering at Pennsylvania State College.

"*I believe* steam will be the preferred medium for heating larger buildings being planned for construction after the war," writes Mr. A. Ernest D'Ambly, Philadelphia Consulting Engineer. "Not only because of its low first cost and economical operation, but because steam easily meets the wide range of heating needs. With modern Controlled Steam Heating we can anticipate and satisfy any demands that the weather may make. The amount of steam produced can be automatically varied as outdoor temperatures change, or as heating requirements for different parts of a building may vary."

▲

A. Ernest D'Ambly has specified the Webster Moderator System of Steam Heating for such installations as Abington Hospital, Abington, Pa.; St. Elizabeth's Convent, Cornwells Heights, Pa.; Hill Creek Homes, and Home of the Merciful Saviour for Crippled Children, both in Philadelphia. He also acted as engineer for the following Webster Hylo System installations: Nazareth General Hospital and St. Christopher's Hospital, Phila.

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Pioneers of the Vacuum System of Steam Heating : : Est. 1888
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STEAM Heats America . . .

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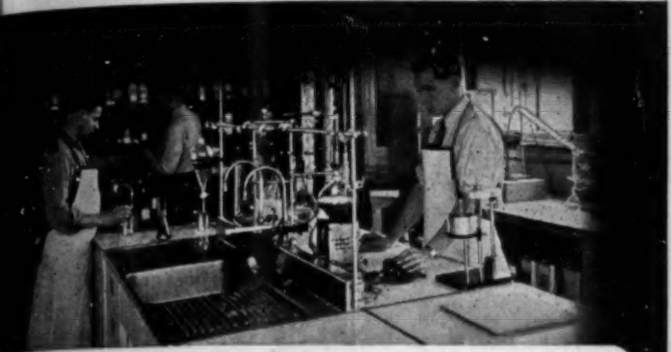
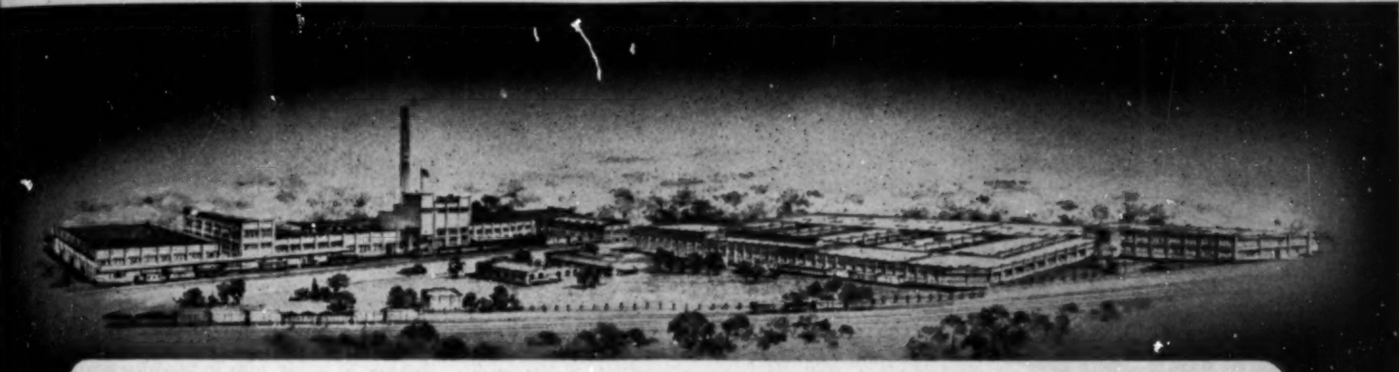
These are our postwar plans . . .

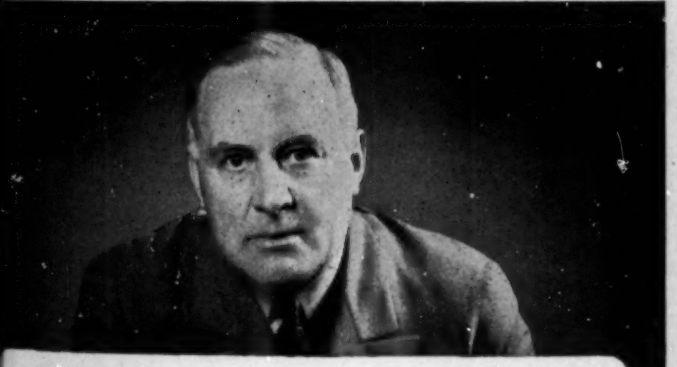


1 *To expand the practical uses of Upson Panels through continued research and the development of still more improved techniques for the benefit of the industry.*

2 *To give every possible aid to the users of Upson Panels wherever their unique characteristics produce a better job than other materials can provide.*



3 *Needs of our armed forces come first, naturally. But when our war job is done, we plan to turn all our experience and facilities of our 23 acre plant—largest of its kind in America—toward supplying maximum employment and efficient production of Upson Panels for the postwar building industry.*



4 *To continue the 100% dealer policy, consistently maintained by the same Upson management since the founding of this business, 32 years ago.*

5 *To develop still greater consumer preference and understanding of the advantages of Upson Panels through national advertising, already under way.*

STRONG-BILT PANELS—*approximately 3/8" thick—for new construction.* **KUVER-KRAK PANELS**—*1/4" thick—for covering cracked plaster.* **UPSON-PROCESSED BOARD**—*3/16" thick—for display and general utility uses.* **DUBL-THIK FIBRE TILE**—*for kitchen and bath.*

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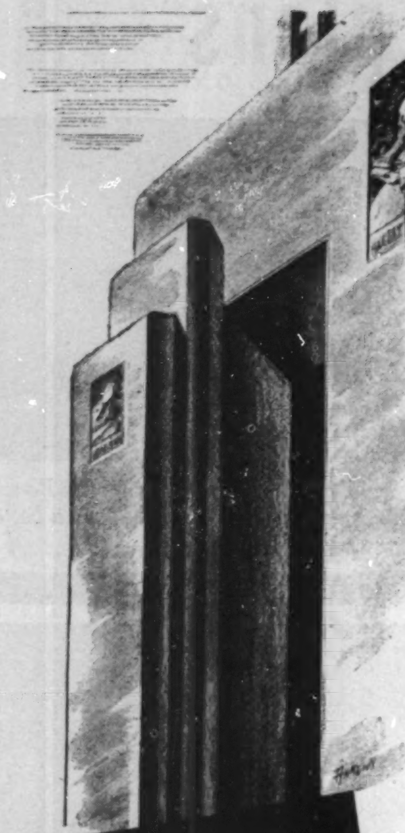
Upson Quality Products Are Easily Identified
By The Famous Blue-Center

UPSON

SPECIALISTS IN PANEL BOARD



Montgomery Elevators

IN FUTURE HOSPITALS

NEW HOSPITALS now being planned will utilize new materials and techniques. And where passenger and freight elevators are required, new problems will arise. For assistance in solving these problems you can depend on Montgomery. For over 50 years hundreds of Montgomery Elevators have been giving dependable service in hospitals throughout the country. Accurate records show that practically no major repairs have ever been required. Too, original cost of Montgomery Elevators is generally lower than that of other comparable makes. If you are planning a specific project we invite your elevator problems.

MONTGOMERY MANUFACTURES a complete line of passenger and freight elevators, electric dumbwaiters and special equipment for vertical transportation.

montgomery Elevator company

HOME OFFICE • Moline, Illinois
Branch Offices and Agents in Principal Cities

(Continued from page 142)

parks and the creation of new house lots. The remaining land would be divided into 2,500 lots, and exchanged for existing lots.

The houses to be erected would have a nominal value of $2,600, but would cost only $1,650 because of mass construction savings. Present lot-owners would purchase the houses under a 20-year FHA insured loan (already approved by the FHA) at a cost of $3.50 a week all-inclusive.

Details of the plan are far advanced; a variety of plans for the houses have been developed, and the city is reported to be wholly behind the idea. But what is not made clear is whether or not the people who now live in the shacks of the district actually can afford to pay even as little as $3.50 a week, desirable as a fine new house and an improved lot may be. That is the only obvious flaw in the Zachry plan.

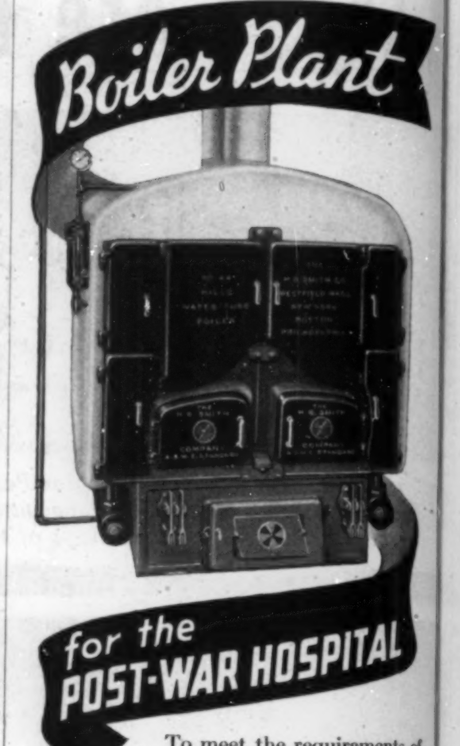
BRITAIN LOOKS BEYOND THE BATTLE

By Waldo G. Bowman. Engineering News-Record, New York 18 (330 W. 42nd St.), June 15, 1944. pp. 102-110. illus.

So much has been written both in this country and abroad of Britain's already well developed postwar building program that there is little in this article of Mr. Bowman's that comes under the heading of news. But it was not his purpose to write news. What he has done is to sum up the whole situation in Britain since the outset of the war—the various reports, the legislation, the work of the several ministries concerned with the problems.

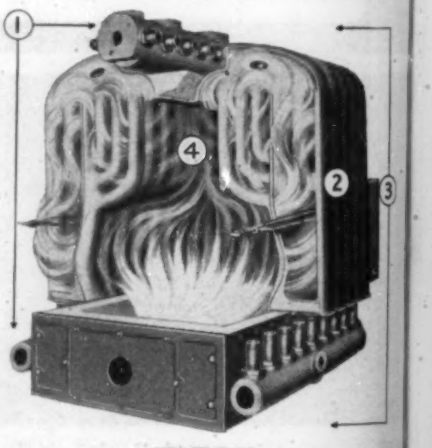
Two British planning organizations especially win Mr. Brown's praise: the Ministry of Town and Country Planning and the Town Planning Institute. Of the Ministry, he has this to say: "It has no counterpart in the United States, but its potentialities are so great and its plans for developing them so radical (by our standards) that it has great significance."

"The first thing to note about planners in Britain," Mr. Bowman continues, "is that they have what amounts to a separate professional status. This has been brought about through the efforts of the Town Planning Institute, organized in 1913 by interested architects, engineers and public officials. Growing rapidly in membership and influence, this Institute was the pioneer and is now the leader in developing planning techniques and in drafting planning legislation."



To meet the requirements of modern hospital heating, progressively minded engineers are forecasting the increased use of low pressure boilers for heating plus an auxiliary high pressure unit for sterilization steam.

Boilers installed in the post-war hospital will probably be like the units which are now heating the best of similar war time buildings. Let the architect therefore look to successful current installations for information to guide him in the preparation of specifications. H. B. SMITH cast-iron boilers have many exclusive features which especially fit them for hospital work.



FEATURES

1 *Header type construction* — minimizes possibility of mid-season breakdown . . . if section should accidentally crack it may be cut out and boiler can continue to operate.

2 *Vertical Water Tubes* — for fastest steaming.

3 *Cast Iron Construction* — for greatest durability — longest life.

4 *More Heating Surface* — vertical, lateral and horizontal surfaces for highest efficiency.

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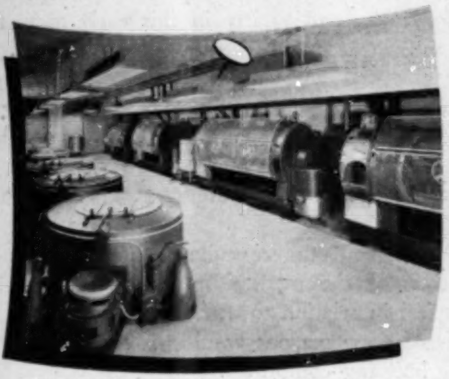
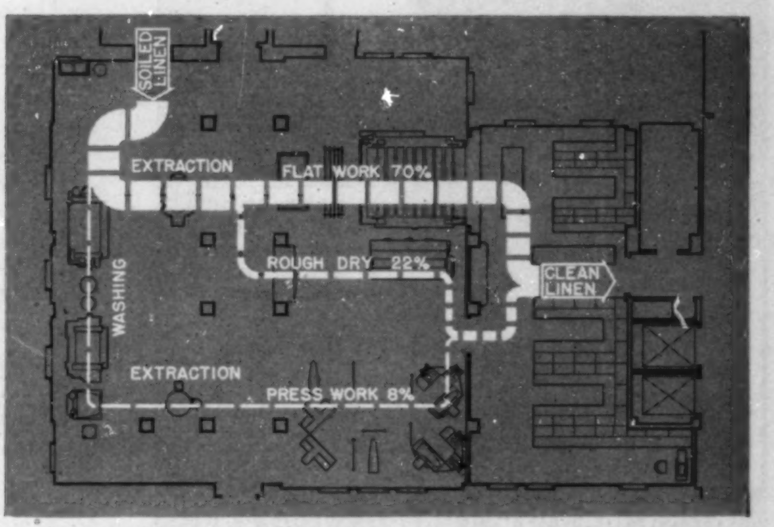
CAST-IRON BOILERS
The H. B. SMITH CO., Inc., Westfield, Mass.

PLAN YOUR HOSPITAL LAUNDRY *with* HOFFMAN *NOW!*

Efficient Laundry Layouts Don't Just Happen



Wesley Memorial Hospital, Chicago



Roosevelt Hospital, New York City

WHEN you see a laundry that's properly planned to provide a smooth flow of work with a minimum amount of retracing of steps, you see the result of careful planning. From an operating standpoint, the hospital laundries installed by Hoffman are notably successful. When you call Hoffman to assist in the important job of planning the layout, you assure your client highest output with a minimum of labor to tend the machines—a smooth forward flow of work that means real economy of operation.

Now is the time to plan the post-war hospital laundry. Then you'll be ready to act when all the machinery required is again available. Experienced Hoffman technicians are available now—to survey your needs and make recommendations.

But Hoffman does not stop here. When your client has installed Hoffman equipment, we are prepared to advise on efficient linen controls and laundry operation. We furnish maintenance manuals and lubrication data and render prompt service on replacement parts. Experienced Hoffman servicemen are available to help your clients keep their equipment in top condition.

So when you plan with Hoffman, you plan well . . . Write, wire, or phone us.

Skilled Technicians—at your service

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EQUIPMENT THAT Majors IN UTILITY

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48 PAGE BOOK
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PLANNING FOR SCHOOLS
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Get the most out of your School Gymnasium. Insist on Horn Electric Folding Doors and Horn Folding Gym Seats. Greater flexibility and lower unit cost are clearly illustrated in the new, 48 page book, "Postwar Planning for Schools."

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POWERS WATER TEMPERATURE CONTROL

THE HOSPITAL BUILDING PROGRAM

(Continued from page 93)

vide visualizations of approximately how the new construction will appear when completed. Such visualizations can be very helpful in the raising of funds.

Open-Minded Planning

The actual planning will start, in any case, with preliminary sketches, worked out by the architect in conjunction with the consultant. It will be necessary to hold conferences, at frequent intervals, between the architect, the building committee representing the owner and the consultant. This group should expect to proceed slowly and conservatively, particularly in this early part of the planning, when the main features of the building are being carefully and gradually worked out. There must be no hesitancy upon the part of any of the three agencies concerned, to scrap a preliminary plan in favor of a better one. The more open-minded the group can be to new ideas, in this stage of the planning, the better the end results.

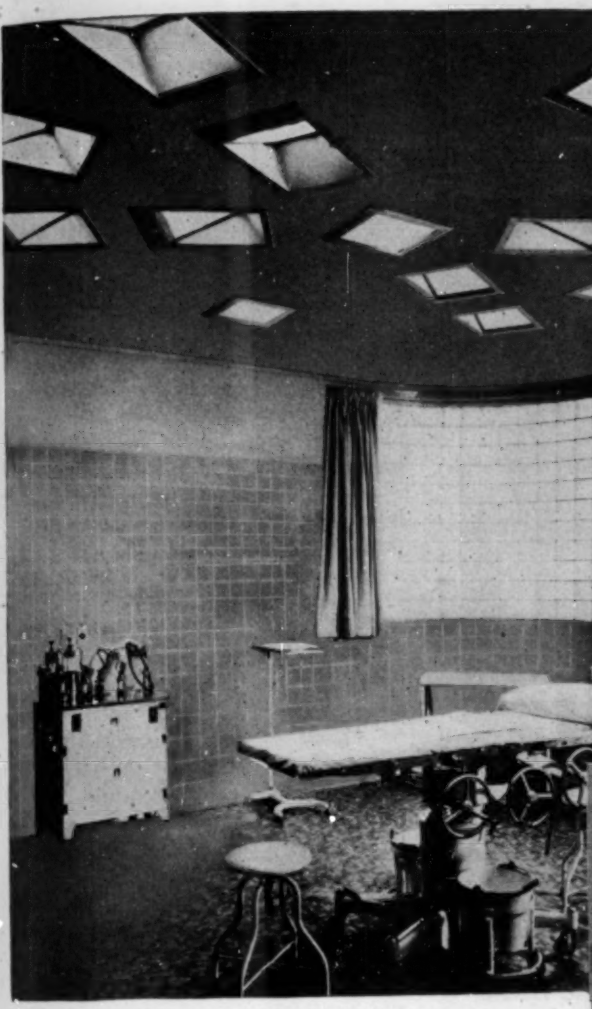
The architect and the consultant should confer with representatives of the medical and administrative staffs of the hospital in relation to details. Final decisions upon suggestions of these persons would, of course, be a function of the building committee.

The Contractor

When sufficient funds are available and plans have been completed, the next logical step will be to select the building contractor or contractors. The architect is of invaluable aid to the building committee in selecting qualified bidders. Contractors, believed by the owner and architect to be capable, are often asked to enter into competitive bidding. If this method is used, it is most important that firms invited to bid be selected with greatest care as to their ability, integrity and past record of accomplishment. In many instances, hospitals have found it desirable to select a builder of superior qualifications and commission him, through subcontracts with the various trades, to construct the building for its actual cost plus an overall percentage fee to the building firm. Here, of course, the selection of the builder is extremely important. Some of our most extensive construction projects in non-governmental hospitals have been handled in this manner to the satisfaction of the owners.

The quality of the architect's job of supervision is important. In large projects it is common to have an inspector or clerk-of-the-works, on the job, not an employee of the contractor, but representing the owner and architect. His main function is to see that the plans and specifications are carried out to the letter.

The diagram which accompanies this article undertakes to depict in graphic form, the development of a hospital project from start to finish. It indicates the groups and the individuals which will be necessary to the successful realization of the project. The seriousness of the responsibility which a board assumes in undertaking a building program has been sufficiently emphasized, it is hoped, as well as the necessary concert of action between owner, architect and consultant.



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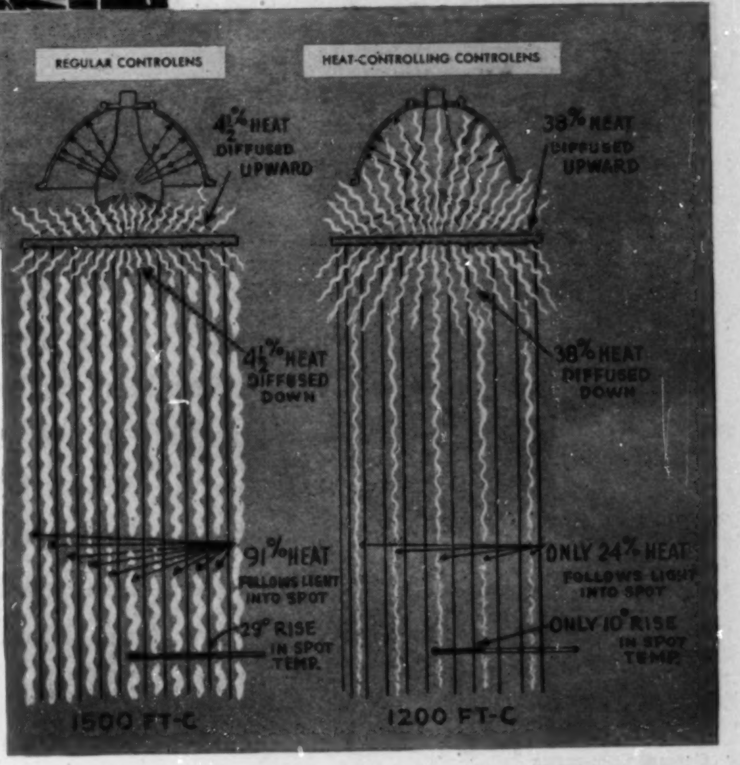
"HI-STRESS"

HEAT-CONTROLLING CONTROLENS

. . . For CONCENTRATED LIGHT

. . . For DISSIPATED HEAT


REGULAR CONTROLENS
HEAT-CONTROLLING CONTROLENS
4½% HEAT DIFFUSED UPWARD
38% HEAT DIFFUSED UPWARD
4½% HEAT DIFFUSED DOWN
38% HEAT DIFFUSED DOWN
91% HEAT FOLLOWS LIGHT INTO SPOT
ONLY 24% HEAT FOLLOWS LIGHT INTO SPOT
29° RISE IN SPOT TEMP.
ONLY 10° RISE IN SPOT TEMP.
1500 FT-C
1200 FT-C

SINCE 1898—systems of illuminating surgeries, developed by Holophane engineers, have been recognized by authorities as the most effective, permanent lighting for this specialized purpose . . . Today, in the new heat-controlling Controlens, Holophane makes another contribution to hospital efficiency.

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Holophane engineers will be pleased to provide, without charge, consultation and recommendations for efficient, economic lighting throughout all hospital areas. Write for latest bulletin and data sheets.

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IMPROPER LAND USE, NOT TAXATION, HELD CAUSE OF NEW YORK'S BLIGHT

New York's real estate, taken as a whole, is deteriorating faster than it is being replaced, according to the Committee on Civic Design and Development of the New York Chapter of the A.I.A. Evidence of this deterioration is widespread throughout the city, according to the committee, which cites lack of proper land use and city planning.

"Contrary to the prevailing conception of the public, deterioration is not confined to the slums or to the blighted areas," the report says. "The process affects all classes of structures. It extends to office and loft structures, and to docks, terminals, and warehouses. Another of its characteristics is traffic congestion within the areas affected.

"Congestion of traffic is most acute in, but is not confined to, the newly and densely built-up central districts, such as midtown and downtown Manhattan. In these central districts depreciation is far more extensive than meets the eye. A consideration of the finances of structures, even of many properties that are comparatively new, reveals a strong trend towards premature economic obsolescence. We encounter many cases of buildings that are structurally sound, yet are economically unsound, because they operate at a loss or bring in but a scanty return on the investment.

"Another example of deterioration is seen in the area between Chambers Street and 23rd Street, and East River to North River. This district, although blessed with the finest rapid transit, is a vast no-man's land, which somehow cannot 'find' itself; with the result that all classes of properties within it, whether residential or business, are sadly deteriorating.

"Still other cases of deterioration show an adverse effect on New York City in its function as a port. To cite but one instance, the old Washington or 'Goose' Market in lower Manhattan, presents a picture of economic loss. Here the huge business, transacted in receiving and distributing the larger part of fruits and vegetables that are shipped into New York, is forced to operate in a jumbled mass of antiquated structures and narrow crowded streets, at a considerable loss, a loss reflected in high prices of fruits and vegetables.

"These are but a very few examples of real property deterioration among the large number of such throughout the city. It is important also to realize that the situation represented by these conditions has existed for several decades. Incidentally, this shows the fallacy, entertained in some quarters, that the burden of taxes on real property is chiefly responsible for the deterioration and unsatisfactory finances of many New York buildings. Taxes have caused complaint only in recent years and are but a minor factor among many that lie at the roots of the difficulty."

The heavy share of the responsibility for this condition of deterioration rests with the present Zoning Resolution and present procedures as to master planning, the committee, headed by Grosvenor Atterbury holds. The parts of the master plan adopted to date are incomplete in themselves, and unrelated to each other, it is charged. The city has not yet adopted an official master plan of land use, although the City Planning Commission has made efforts in that direction, it is pointed out. The various types or patterns of

(Continued on page 150)

The Doctors Hospital Selects NEW LONDONER HOLLOW-CORE FLUSH DOORS PAT. NO. 2272227

It isn't by chance that New Londoner Hollow-Core Flush Doors are used in the construction of so many of America's fine buildings. It's by choice. Through many years of faithful service, these famous doors have won the acceptance of those best qualified to pass judgment on high quality. And this is equally true in home building field. Architects, builders and contractors in ever increasing numbers are recommending New Londoner Hollow-Core Flush Doors.

Doctors Hospital
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A PLYINEERED PRODUCT

AMERICAN PLYWOOD Corporation
NEW LONDON, WISCONSIN

WHAT ARE WE DOING ABOUT THE *POSTWAR* WEATHER?

AFTER the war, the weather is going to be pretty much the same — as far as you're concerned.

But . . . from *our* point of view, postwar weather will be altogether different. For the development, in recent years, of new architectural trends involving, for example, larger window areas and greater utilization of insulation has created a whole new set of problems in indoor "weather control."

That's why we, at General Electric, are so interested in your postwar plans. With a fuller knowledge of what you architects have in mind for the house of the future, G-E engineers can plan more efficiently . . . design heating and air conditioning equipment more accurately to your future needs . . . save you, and home owners, money through lower heating costs.

With your help, it is our aim to present, in the improved General Electric heating and cooling equipment of tomorrow, a new measure of control over indoor weather . . . a new high degree of human comfort.

☆ BUY WAR BONDS ☆

General Electric Company, Heating and Air Conditioning Equipment Divisions, Section 4448, Bloomfield, N. J.

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